Presentation to NARUC on implementing the 811 code for Pipeline Safety

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PBS&J

PBS&J Background

- → Founded in 1960
- → Over 3,600 employees in 60+ offices
- → Multi-Disciplined Consulting firm focusing on: Program Management, Engineering, Construction, Transportation, and more
  - ➢ **Transportation Network Information Division includes Voice and Telecommunications Services**
- → *Lead consultant for National 511 Coalition (under direction of AASHTO and USDOT)*
- → *Lead for the 511 Alliance, providing Voice and Telecom solutions for VA and NC DOTs*
- → General Consultant for Intelligent Transportation Systems (ITS) for Florida DOT

Eli Sherer Background

- → Degree in Mass Communications
- → Background in broadcasting and broadcast engineering; Focus on traveler information since 1981
- → Called first meetings with local carriers in effort to secure N11 code for traveler information (1995)
- → Provided background language and info for petition to FCC for an N11 code for traveler information
- → *Carrier Coordination for 511 implementation Florida and Virginia. Assistance in North Carolina and other states and regions*

Overview

- →What is 811?
- →One Call Centers in the US
- →Issues with implementing 811
- →How to make 811work
  - Landline Calling
  - Wireless Calling
- →What about Call Transfers?
- →Finally… Who is really responsible for 811?

What is 811?

→ In March 2005, the FCC assigned the 811 dialing code to state One Call notification systems … (implementing) the Pipeline Safety Act. The order:

- **Requires the use of 811 within two years after publication in the Federal Register (which took place April 13, 2005)**
- **Delegates authority to the <u>state commissions</u> to address the technical and operational issues associated with the implementation of the 811 code**
- **Allows carriers to use either the Numbering Plan Area (NPA-NXX) or the originating switch to determine the appropriate One Call Center to which a call should be routed**
- **Notes that the 811 code should be deployed ubiquitously… all telecommunications carriers including wireline, wireless and payphone service providers**

What is 811? (2)

→The FCC order is as an "unfunded mandate" with no listed method of cost recovery for implementation or continued operations

- **FCC order did not specify "parameters for cost recovery … The Pipeline Safety Act did not provide for federal financial support as part of the mandate for a nationwide abbreviated dialing arrangement for access to One Call Centers…. Congressional mandate and benefits of a national N11 code assignment, specifically 811, outweigh any concerns regarding cost recovery on the federal level. These issues are most appropriately addressed by the state and local governments."**

What is 811? (3)

→811 code was assigned in preference to #DIG (#344)

- According to the Common Ground Alliance, #344 is currently in use in a number of states, and a few smaller carriers have already converted to 811
- However the number of carriers may be limited, and focused on wireless… and for come carriers, coverage may be regional and thus, less discrete than desired

One Call Centers in the US

→ According to the One Call Systems International Directory, there are 67 One Call Centers in operation in the 50 states (and DC)

- **Five New England states, (Maine, Massachusetts, New Hampshire, Rhode Island and Vermont), operate using a single toll-free number (800-DIG-SAFE)**
- **Ten states operate more than one (between 2 and 6) One-Call Center**
- **Of these multi-center states, *not all* are divided geographically**

Issues with implementing 811 (Lessons learned through 511)

- → It's not as easy as just sending a note to the carriers
- → Wireline is "easier" than wireless for *geographic* routing
- → Geographic routing *may not work* in all areas (multi-system states)
- → Wireline includes *both* ILECs and CLECs, and as per the FCC ruling, payphone providers as well
- → There are likely to be costs involved regardless of the routing scheme, and *most must be be managed state-by-state!*
- → Incidentally, the FCC was silent on VoIP, but this issue will likely surface soon

How to make 811 work

→First, there is no secret decoder ring

- Each carrier must be managed separately
- Due to competition, many carriers will NOT openly share certain information (with implementers and/or each other)
- Agreements can be “negotiated,” *perhaps* even those where there is a specific tariff on file

Landline Calling

Translating N11 Calls – Landline

- → The terminating point of N11 calls can be established in a number of ways (single number, multiple numbers, or through an IVR to determine routing)
- → Determining the best routing scheme depends on the the coverage area of the One Call Center
- → Landline calls can be translated using one of two routing schemes:
  - **Switch Based - Where a call is translated based on the Central Office Switch through which it is processed**
  - **AIN (Advanced Intelligent Network) Based - Where a call is translated based on the NPA-NXX (and perhaps other information), of the caller**

Pricing N11 Landline Translations

→Tariff vs. Individual Case Basis (ICB) pricing

- The FCC assignment of the 811 code mentions, but does not give directives on, cost recovery for implementation and operational costs
- Some carriers have tariffs on file with state Public Utilities Commissions for *all N11 codes*, while others filed for specific codes, (311, 511, etc.)
- Still other carriers have no tariff and will price implementations based on specific requests

511 Tariff Examples

(Note some carriers have uniform N11 tariffs in place)

→Bellsouth Tariff

- Per Local Calling Area $389.90
- Per Central Office Activation $182.00
- Per change of point-to number $ 13.50
- No recurring charges

→Alltel

- Per Central Office Activation $330.00
- No recurring charges

511 ICB Pricing Examples

(Costs may be similar for other N11 services)

- **Sprint**
  - **Per Central Office Activation $250.00**
  - **Record Order charge $ 25.60**
  - **No recurring charges**
- **SBC**
  - **Per Central Office Activation $~800.00***
  - **No recurring charges**
- **Verizon**
  - **Per Central Office Activation $~500.00****
  - **One Time charge $1,500.00**
  - **No recurring charges**

***SBC charges vary by state, with some as high as $1,250.00 per CO**

****VZ has been looking to file N11 tariffs based on AIN network pricing**

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Order of Magnitude ($$) for 511 programming - Landline

→Number of carriers (ILECs) varies by state

→Charges vary per ILEC

→Some ILECs impose different charges depending on the state

→Approximate total ILEC charges

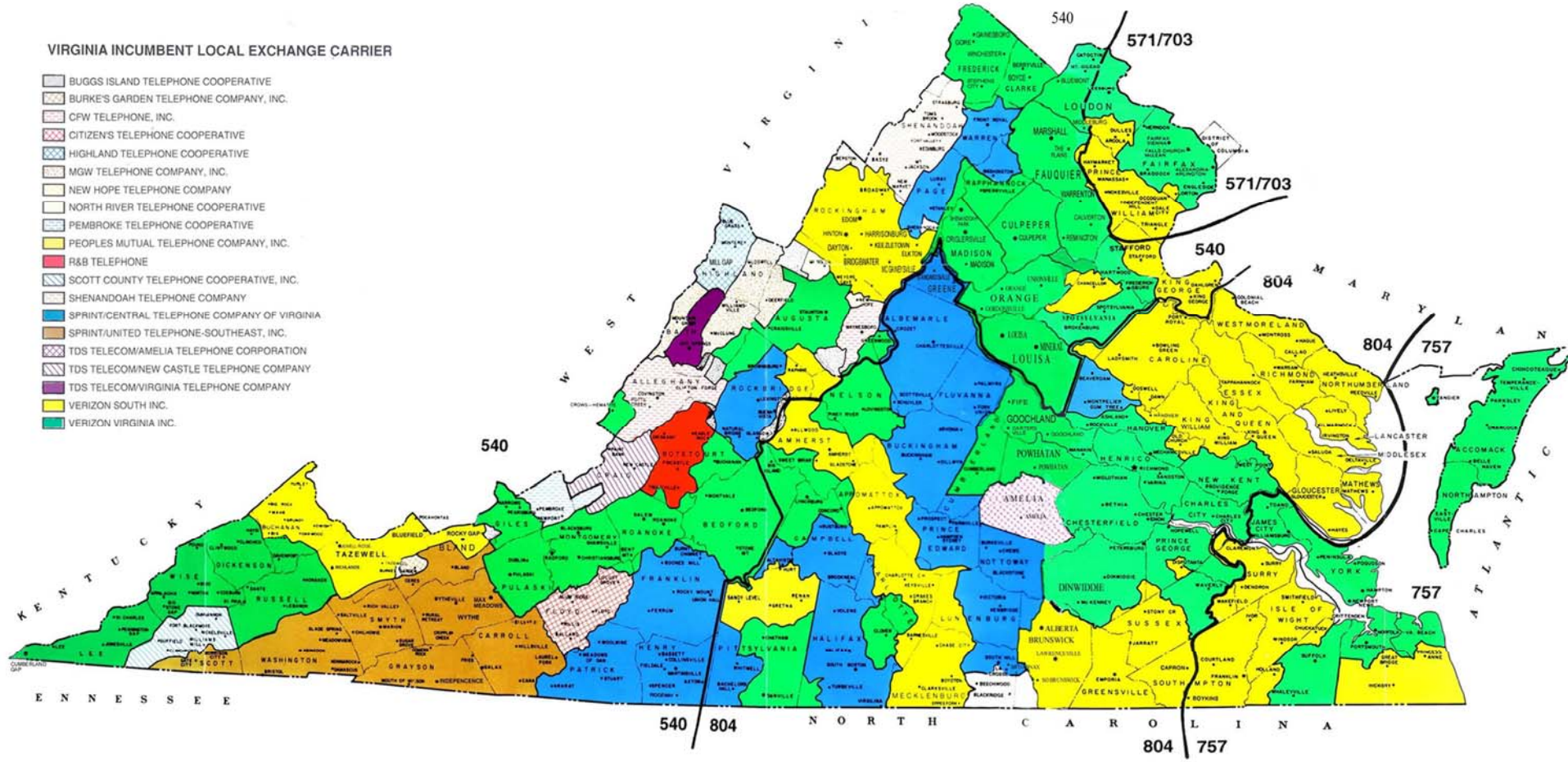
- Florida $147,368
- Virginia $ 58,533

Order of Magnitude – How Many Carriers are we talking about?

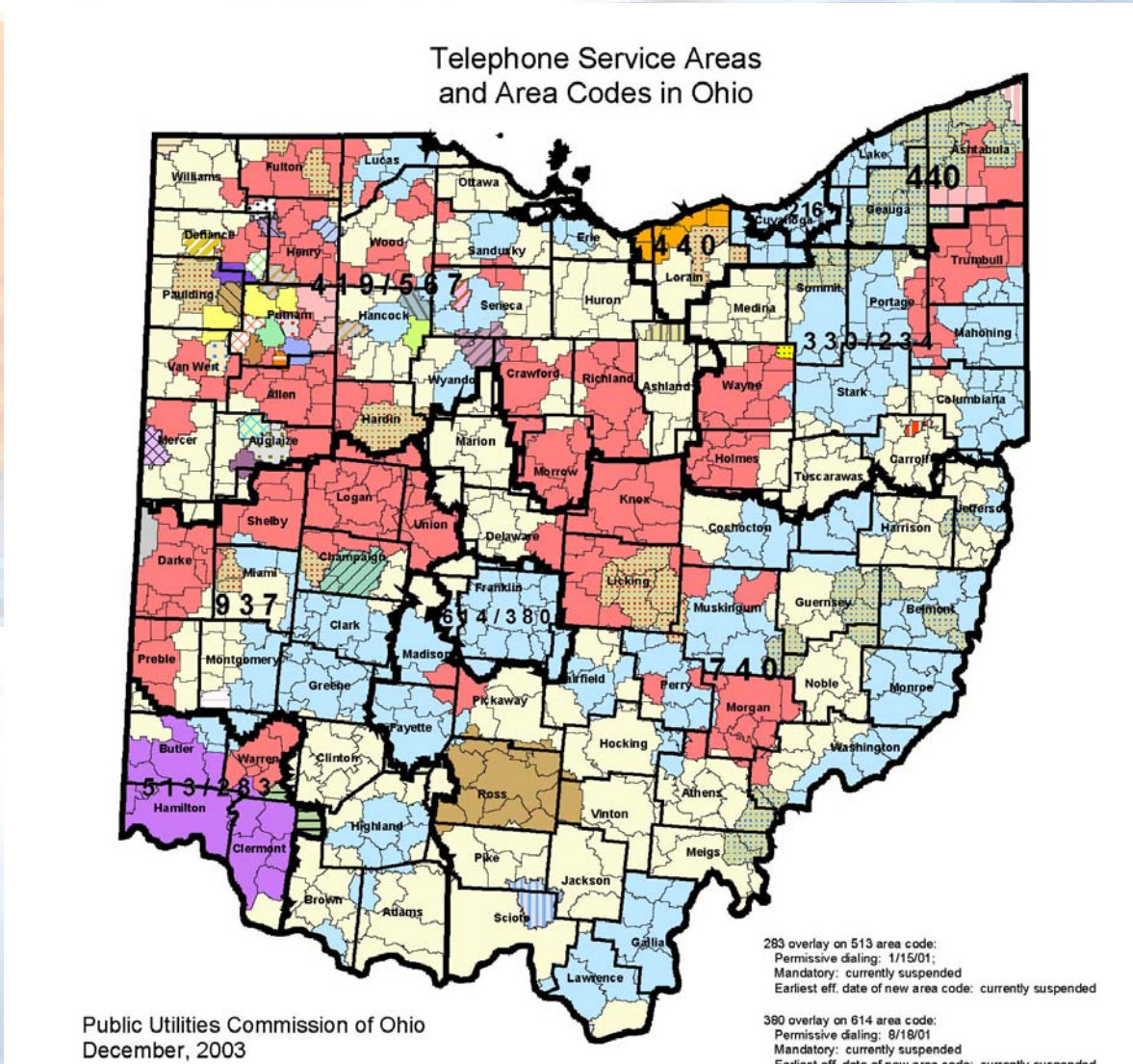
→The number of ILECs in various states

- Rhode Island 1 ILEC
- Connecticut 1 ILEC
- Massachusetts 5 ILECs
- Florida 11 ILECs
- Virginia 21 ILECs
- Georgia 36 ILECs
- Ohio 43 ILECs
- Illinois 55 ILECs

ILEC (21) Coverage Map - Virginia



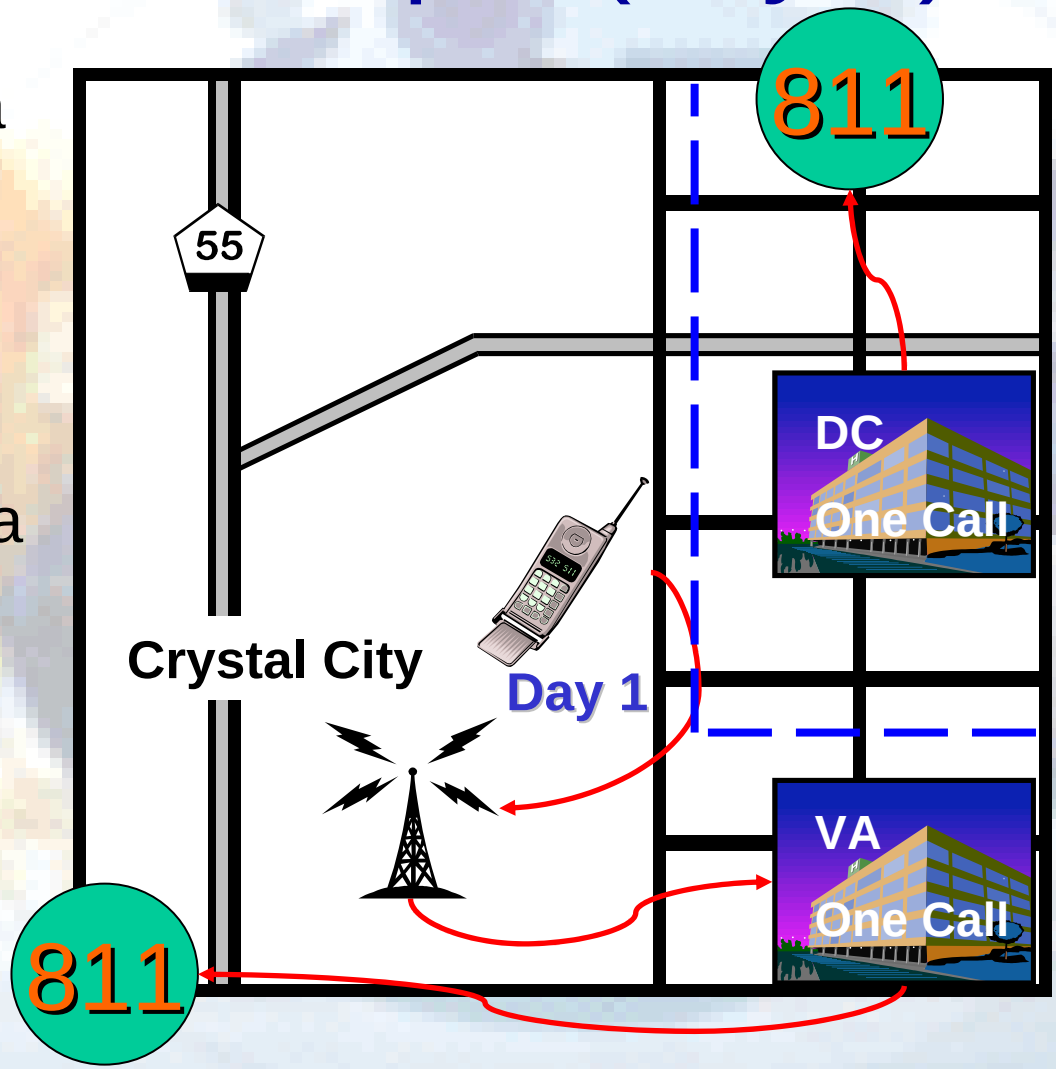
ILEC (43) Coverage Map - Ohio



Wireless Calling

Wireless Call Example (day 1)

- → Caller dials 811from a mobile phone
- → Call is received at the nearest OR strongest tower
- → Call is then routed to a switch serving many towers for processing
- → Call is translated to terminating number

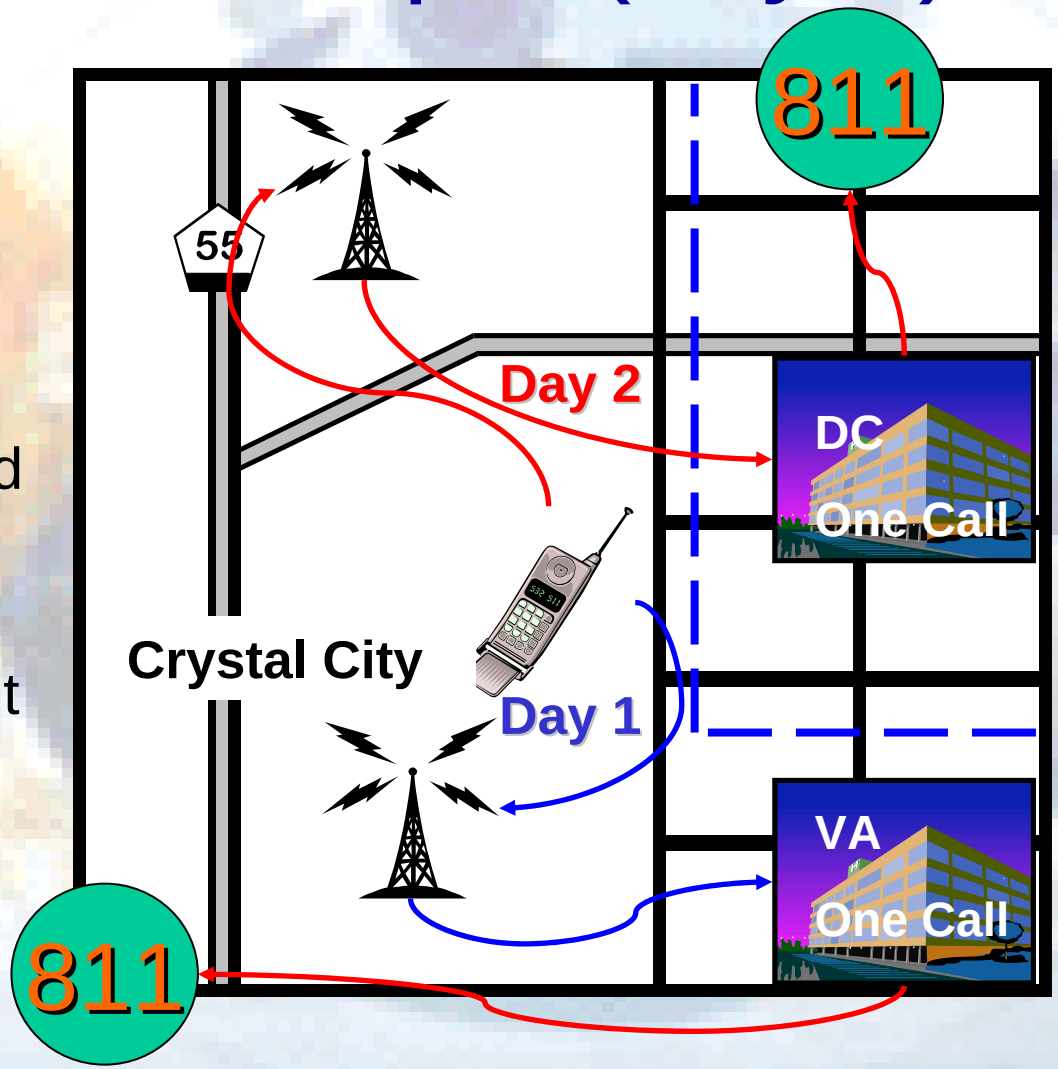


Wireless Call Example (day 2)

→Some switches are located across county or state borders

→Calls may not always be received at the closest or strongest tower due to “load balancing”

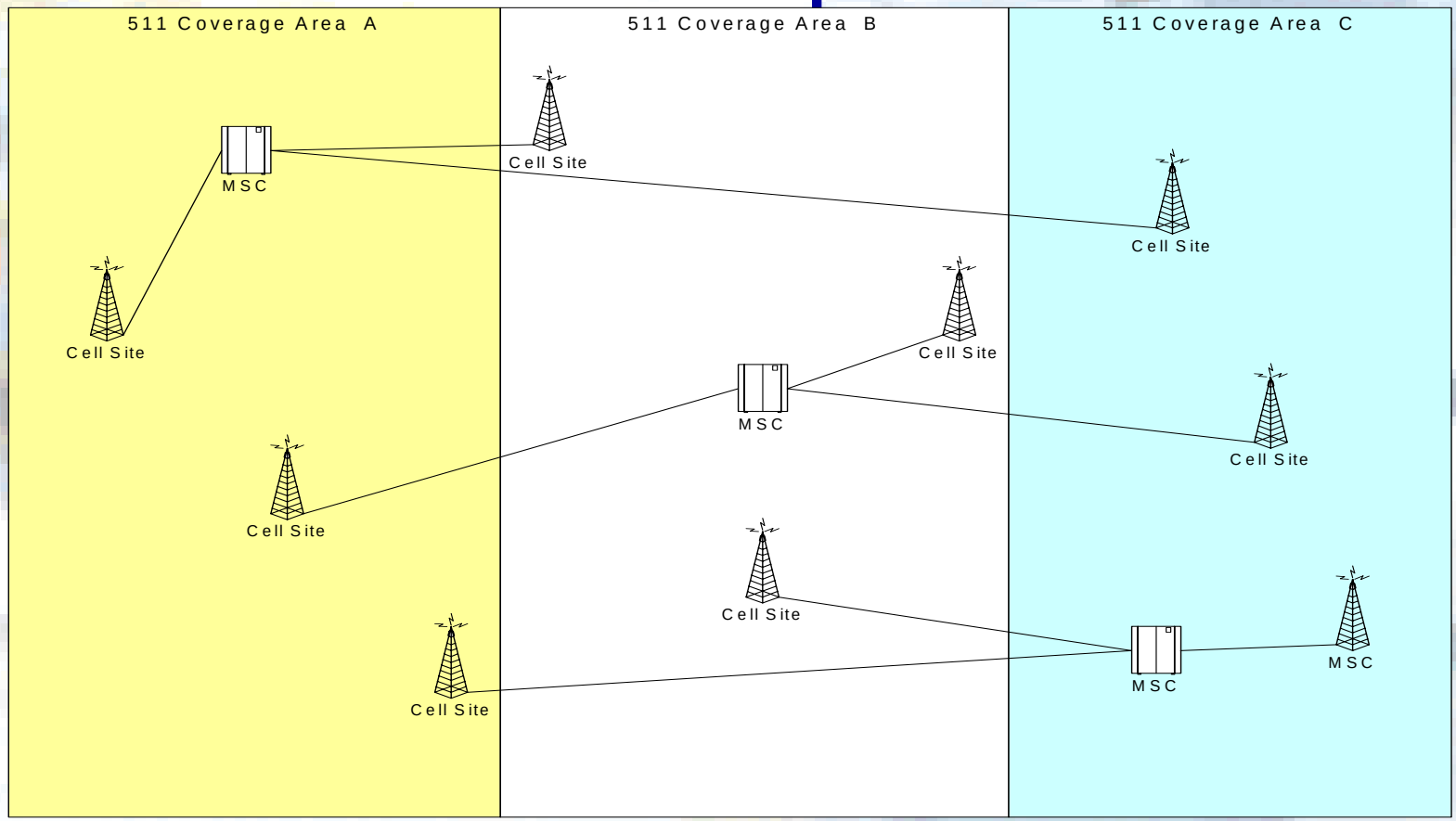
→This could result in a call being processed at different switches at different times



Translating N11 Calls - Wireless

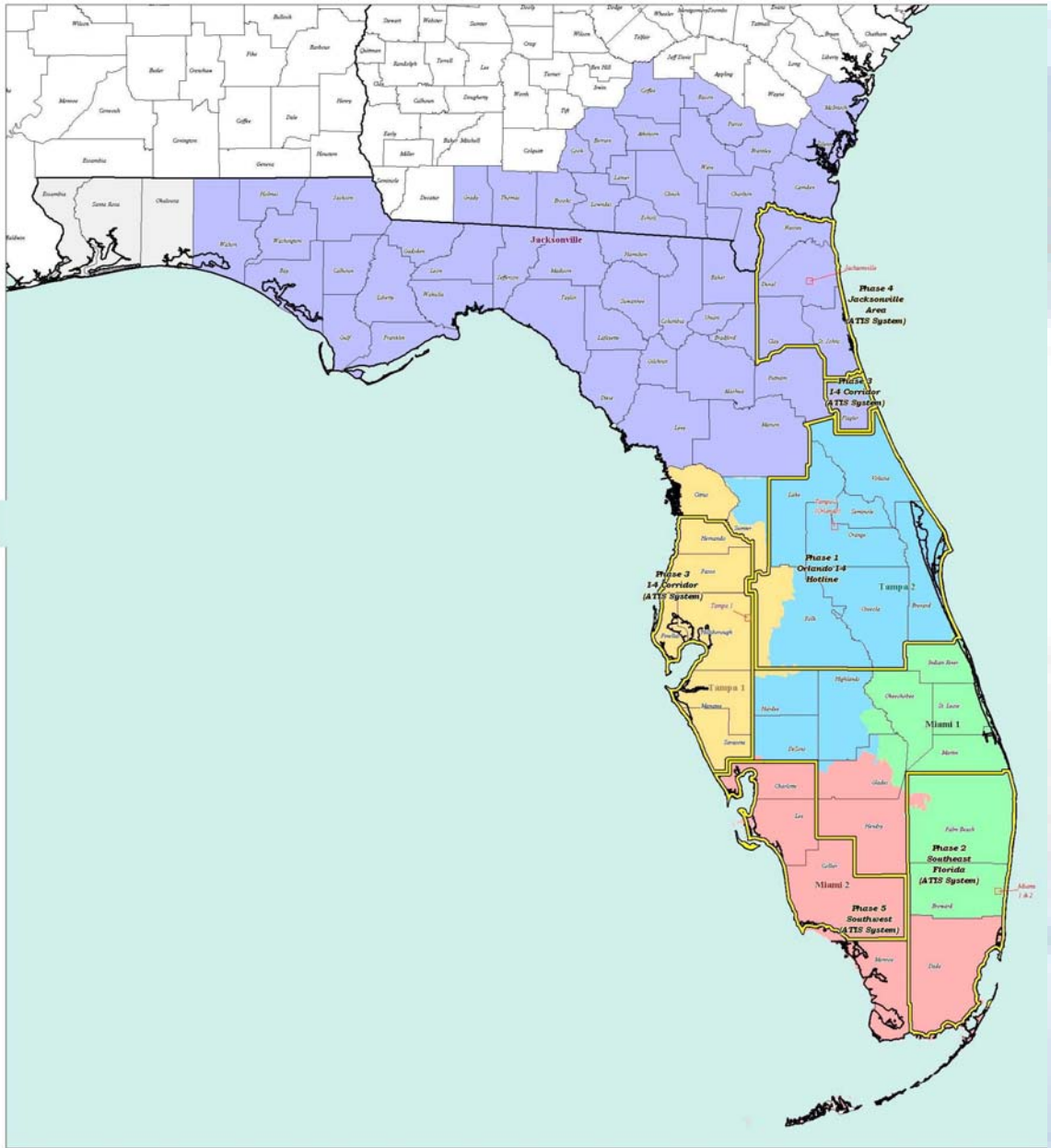
- → Translations can be programmed by Switch or by Tower, or by Tower Face (3 per-tower)!
- → Some switches cover large areas, *even crossing state lines*
- → This can mean a call to your neighbor may travel across state lines and back before completion!
- → Switch level programming may also provide “Over- or Under-Coverage” in some areas (and it’s different for each carrier)

Translating by Switch Example



From the 511Deployment Coalition Deployment Assistance Report #4 – 511Regional Interoperability Issues

Extreme Example of Switch Over-Coverage



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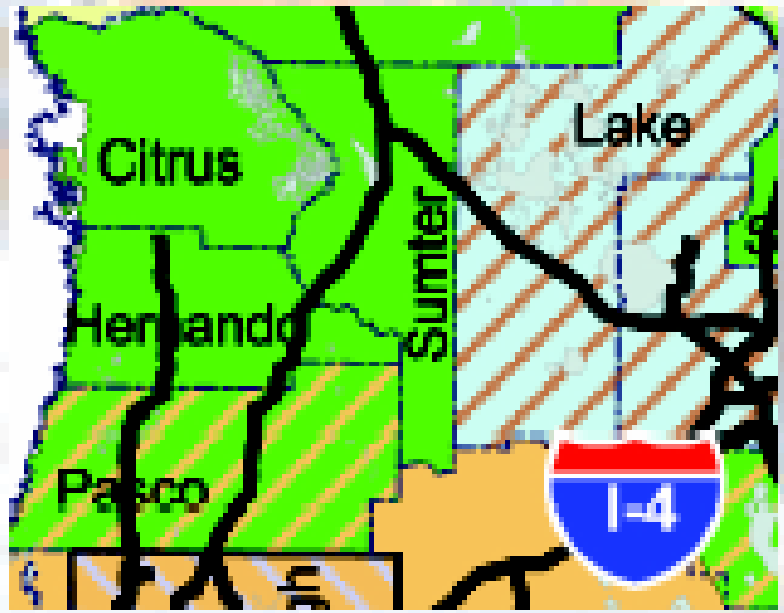
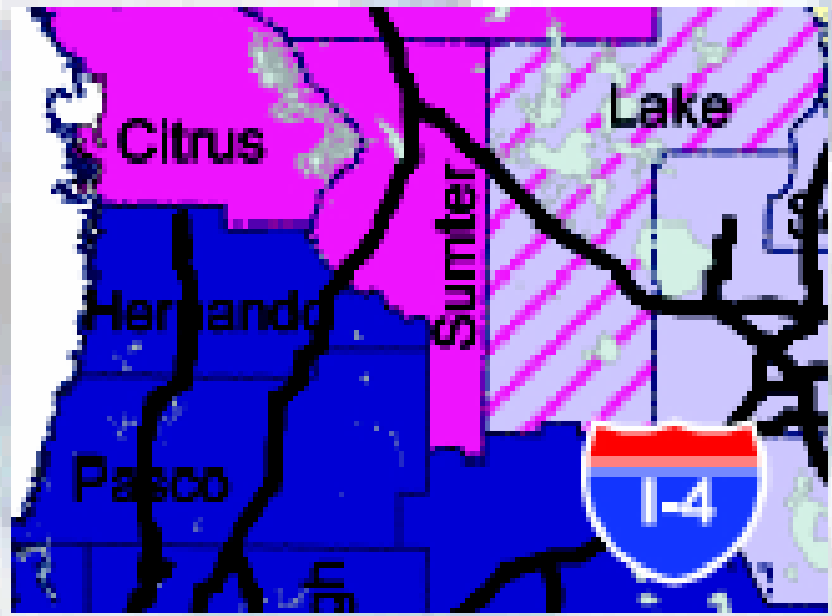
Wireless Switch Coverage Varies from Carrier to Carrier

Carrier A's switch level coverage around the Tampa Bay area



Carrier B's switch level coverage around the Tampa Bay area



Pricing N11 Landline Translations

→Many carriers will agree to translate 811 calls at switch level for little or no cost

- ➢Exceptions
  - ✓Carriers may propose costs based on tower level programming (especially when they must "carve-out" areas within a state)
  - ✓Carriers may impose a One Time Charge for service initiation

Pricing N11 Landline Translations (2)

→Costs will vary by carrier when asked to translate on a tower level

- Examples
  - ✓One carrier may charge $25~$100 per tower based on the number of towers to be programmed
  - ✓Others may charge an hourly rate based on project management and engineering time.
  - ✓Still others may charge an hourly rate based on actual implementation time

Order of Magnitude ($$) for 511 programming - Wireless

→Total Estimated Wireless Costs for 511 programming

- Florida $65,451*
- Virginia $ 5,900**
- Illinois $23,100

*** Estimate based on significant tower level programming for multiple 511 systems, but is offset by programming performed before carriers began charging for certain programming.**

**** Estimate is based entirely on Cingular's 908 towers in Illinois.**

What about Call Transfers?

Types of Call Transfers

- → Call transfers may be required when a caller “lands” in the wrong One Call Center, or wishes information from another center
- → There are a variety of call transfer methods from which to choose, many involve additional charges
  - **Simple Call Transfer**
  - **Call Transfer and Drop**
  - **Call Transfer and Drop, and transfer charges**
- → Call Transfers can be accomplished manually or through an IVR
- → Decision on method is based on an even greater number of factors

Finally… Who is really responsible for 811?

- → Discussions with One Call Centers seem to indicate that, in their opinion, their responsibility is to provide the terminating number, and that costs and notifications fall to the PUCs.
- → Discussions with some PUCs indicate that they can call for workshops to discuss routing and costs, but they have no authority to implement routing or payment schemes.
- → Meanwhile, some One Call Centers are performing ad hoc “conversions” or implementations with smaller carriers one by one. At which rate, the two year deadline will be very hard to reach.

Thank You

Comments or Questions?

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