

TEXAS DEPARTMENT OF PUBLIC SAFETY

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August 31, 2021

Dear Member of the Texas Legislature,

The Texas Department of Public Safety, in cooperation with the Texas Interoperable Communications Coalition and other key local, state, and tribal stakeholders, is pleased to report progress toward public safety communications interoperability in Texas. In accordance with Texas Government Code Sections 421.098 and 421.096, on behalf of the Office of the Governor, the Annual Report on Interoperable Communications is provided for your review and information at: <https://www.dps.texas.gov/IOD/interop/docs/interopRpt.pdf>

Accomplishments during the 2020 reporting period include:

- Adopting the updated Statewide Communications Interoperability Plan (SCIP)
- Updating the electronic Texas Field Operation Guide (TXeFOG), available on both the Apple and Google Play Stores; and
- Conducting some multi-jurisdictional training opportunities, although the COVID-19 pandemic impacted the ability to hold in-person Communications Unit training and exercises.

Twenty (20) of the twenty-four (24) Texas Regional Councils of Government (COGs), the State Agencies, and three (3) tribal nations completed a Focus Group survey, which provided greater clarity and details regarding public safety communications needs and accomplishments within each region.

With continued cuts in federal grant funding for these purposes, there will be an impact on public safety communications interoperability for state, local and tribal responders across Texas. Though available federal grant funding decreased in this reporting period, in 2020, state grant funding became available through the Statewide Emergency Radio Infrastructure (SERI) grant program, so we anticipate a corresponding increase in the maturity level for future years.

Should you have questions or require additional information, please contact us.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Steven C. McCraw'.

Steven C. McCraw
Director

**Fiscal Year 2021 Report on Interoperable Communications
to the Texas Legislature as required by:**

Texas Government Code 421.098

Texas Government Code 421.096

EXECUTIVE SUMMARY

Per Government Code 421.098, the Office of the Governor shall provide an annual report to the Legislature a report on the status of interoperable communications in Texas. The citizens of Texas rely on and expect emergency responders to arrive quickly to a scene and be ready to help them during a day-to-day incident or emergency. Texans are fortunate to have an impressive force of over 5,300 emergency response agencies that respond daily to emergencies and life-threatening incidents throughout Texas. Public safety communications systems provide emergency responders¹ across Texas and the nation to perform their mission-critical duties – saving the lives and property of Texans. Decades of focused funding have greatly improved the state of interoperability in Texas; however, there are still some areas with inadequate and unreliable systems.

The 2021 Legislative Report highlights the planning, effectiveness, funding, accomplishments, and challenges of interoperable communications activities completed in Texas during 2020; reported by the Texas Statewide Interoperability Coordinator's Office at the Texas Department of Public Safety, state agencies, regional Councils of Governments, and Tribal Nations through the annual Focus Group survey reports.

Overall, in 2020 the counties in Texas reported a decrease in the Level of Interoperability from 3.85 to 3.82, likely due to a decrease in federal grant funding, natural disasters, and operational/technical challenges in specific areas of the State.

Though the Level of Interoperability and the federal grant funding decreased, the State program had some significant accomplishments to report, including:

- Adopted the updated Statewide Communications Interoperability Plan (SCIP)
- Awarded a Statewide Emergency Radio Infrastructure (SERI) grant of \$1.161M to develop a Radio over IP system of systems interconnection network

The State experienced unprecedented challenges in 2020, including the COVID-19 pandemic, which had many agencies tasking their communications personnel to provide connectivity first for COVID testing sites, and then preparing for COVID vaccine distribution sites.

¹ The term 'emergency responders' refers to persons from the broad public safety and first responder community, including but not limited to: law enforcement, fire, emergency medical services, emergency management, transportation, public works, and hospitals.

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Statewide Communications Interoperability Plan (SCIP)

The Statewide Communications Interoperability Plan (SCIP) is a tool developed by the U.S. Department of Homeland Security (DHS). It is used across the nation to assist the public safety community by identifying goals and initiatives to improve public safety communications with input from local, state, tribal, and federal stakeholders. The SCIP document started in 2007 as a requirement in the DHS grant process and has continued as a best practice.

The Texas Statewide Interoperability Coordinator (SWIC), in consultation with the Texas Interoperable Communications Coalition (TxICC), works jointly on public safety communications interoperability planning and policy. The TxICC is specifically constituted to examine communication issues across Texas and identify cohesive solutions to address them through the SCIP. The TxICC established a SCIP Executive Council (SEC) consisting of one delegate from each Council of Governments (COG) region, the three Tribal Nations, and one State Agency representative to serve as the official delegates of the TxICC.

TxICC representatives use the SCIP to help their respective communities improve public safety communications. The SCIP prioritizes resources, strengthens governance, and educates and informs local, Tribal, and State elected officials and stakeholders of the importance of public safety communications and the need to continue funding it.

On a routine basis, the Texas SWIC Office conducts a workshop to review existing goals and initiatives, develop new initiatives, and set priorities for the following year. The TxICC holds its annual conference to review and vote on proposed updates to the SCIP and discuss other public safety communications issues and updates.

The latest version of the SCIP may be found on the Texas Department of Public Safety website.

<https://www.dps.texas.gov/IOD/interop/docs/texasSCIP.pdf>

Regional Interoperability Communications Plans

In 2011, the TxICC initiated Regional Interoperability Communications Plans (RICP) to document public safety communications needs, create a technical implementation and migration plan, and identify the associated costs to meet those unique needs within each COG. Each COG/Tribe maintains and reviews the plans regularly. Through their annual Regional Focus Group Workshop, COGs and Tribes bring together public safety responders to discuss and

Communications is the fundamental capability within disciplines and jurisdictions that practitioners need to perform the most routine and basic elements of their job functions. Agencies must be operable, meaning they must have sufficient wireless communications to meet their everyday internal and emergency communication requirements before they place value on being interoperable, i.e., able to work with other agencies. Communications interoperability is the ability of public safety agencies (police, fire, EMS) and service agencies (public works, transportation, hospitals, etc.) to talk within and across agencies and jurisdictions via radio and associated communications systems, exchanging voice, data and/or video with one another on demand, in real-time, when needed, and when authorized. It is essential that public safety has the intra-agency operability it needs, and that it builds its systems toward interoperability.

Source: Target Capabilities List,
www.DHS.gov, 29

document progress on their RICPs and the SCIP, as well as priorities, accomplishments, challenges, and needs.

The SWIC Office partners with the U.S. Department of Homeland Security to hold workshops to review and update RICPs. Since 2017, fourteen COGs and all three Tribes have conducted workshops to update their regional plans.

The Current Status of Voice Communications Interoperability in Texas

The Texas Statewide Communications Interoperability Maturity Model is based on the SAFECOM Interoperability Continuum.² The model outlines the evolution from the lowest level to the highest level of communications interoperability. In Appendix A, the map of Texas highlights the status of each county regarding their level of interoperability in the "Voice Technology" lane of the model. As the map indicates, in 2020, Texas is reporting a level of 3.82 (Mid-Range) on the Voice Communications lane of the Maturity Model. This level is a decrease in maturity from 3.85 reported in the Fiscal Year 2020 Report on Interoperable Communications. Several factors contributed to the decline, including a reduction in federal grant funding, natural disasters, and operational/technical challenges in specific areas of the State.

**Texas Statewide Communications
Interoperability Maturity Model Color Codes:**

Level One (least interoperable)0 Counties
Level Two17 Counties
Level Three99 Counties
Level Four51 Counties
Level Five (most interoperable)87 Counties
Total: 254 Counties
Average Statewide Interoperability Level: 3.82	

²<https://www.cisa.gov/publication/interoperability> Through collaboration with emergency responders and elected officials across all levels of government, SAFECOM works to improve emergency response providers' inter-jurisdictional and interdisciplinary emergency communications interoperability across local, regional, tribal, State, territorial, international borders, and with federal government entities.

Expenditures Toward Interoperability

The Office of the Governor's Homeland Security Grants Division allocated Texas jurisdictions State Homeland Security grant funding of \$7,457,470.96 in 2020 to spend towards projects and equipment for interoperable emergency communications. Projects range from constructing towers and updating microwave equipment to purchasing radio equipment and accessories.

The decade's long trend of decreased DHS Homeland Security grant funding continued in the amounts awarded in 2020, where Texas realized a funding decrease of over \$493K from the previous year. This decrease is a contributing factor to the continued drop in the average interoperability level.

The Office of the Governor's Homeland Security Grants Division allocated Texas jurisdictions Justice Assistance Grants (JAG) funding of \$1,956,838.91 in 2020 to spend towards radios, accessories, and receiver/transmitting communications equipment. JAG grants have not previously been reported but do provide funding for emergency communications equipment.

Grant purchases for communication equipment are forwarded to the SWIC Office for review to ensure alignment with SCIP goals and initiatives.

Accomplishments Toward Interoperability

Representatives from the Texas emergency response community have worked together as the Texas Interoperable Communications Coalition (TxICC) to overcome the identified communications challenges since 2007. The TxICC is the State interoperability governance body responsible for planning and overseeing emergency communications interoperability throughout Texas. Outlined below are some achievements reported through the TxICC, TxDPS, and across the State in 2020.

TxICC / Statewide Accomplishments

- Updated and approved the Texas SCIP by conducting a SCIP Workshop coordinated with the SCIP Executive Council (SEC)
- Updated the Texas Statewide Interoperability Channel Plan (TSICP)
- The SWIC Office conducted various stakeholder engagements and activities:
 - Processed 62 TSICP Memorandums of Understanding (MOUs) defining interoperable communications protocols
 - Approved 153 grant-funded communications equipment requests
- Conducted the TxICC Update Webinar, SCIP Workshop, TxICC Cybersecurity Webinar, State Agency Meetings, and four RICP Workshops
- Updated the electronic Texas Field Operation Guide (TXeFOG), available on Apple and Google Play Stores

- State Agencies improved their communications capabilities:
 - TxDOT added two towers/sites in Corpus, one (1) in George West, four (4) in Bexar County, one (1) at Texas State University, for a total of five (5) new towers built, and one (1) site in Edna on TXWARN. One (1) TxDOT district is upgrading communications, including mobile radios and quantar repeater replacements.
 - TxDPS has added radio equipment on Regional Radio Systems; a GATRRS site in Odessa, a TXWARN site in Madisonville, and a Randal County trunked site. 80% of quantar repeater replacements to GTRs have been completed, 75% of the Gold Elite console replacements with MCC7500 consoles have been completed, and DPS partnered with GATRRS to revive a SOW with portable trunked capabilities.
 - LCRA added three (3) towers and six (6) console radios in Guadalupe county, and six (6) console radios were added to the P25 system in Sequin.

TxDPS Communications Emergency Operations Team (CEOT) Accomplishments for 2020

Completed four (4) deployments supporting TxDPS Task Force and Special Operations:

- COVID-19 Louisiana Border security, at IH10 and IH20, 4/5/20 through 4/28/20
- George Floyd Riots Operation, at Houston Stockyard, 05/29/20 through 6/5/20
- George Floyd Funeral Operation, at Houston NRG Stadium, 6/9/20
- NASCAR Operation, at Texas Motor Speedway, 10/22/20 through 10/25/20

Communications Training Courses offered by TxDPS and DHS/ECD in 2020

- One (1) Communications Technician class
- One (1) Incident Tactical Dispatcher class
- One (1) Auxiliary Communications class
- One (1) Communications Technician Train-the-Trainer class

Communications Exercises coordinated with TxDPS in 2020

Communications Exercises (COMMEX) provides experiential learning based on disaster and critical incident scenarios.

- Texas A&M Winter Institute in College Station - technology and application exercise focusing on information/data sharing
- COMMEX in Florence - functional exercise for completion of Communications Position Task Books. Position task books identify previous experience that is evaluated to obtain State credentialing.
- Search and Rescue and Air Operations Exercise (SARX/AIRX) in Conroe - exercise provided search and rescue personnel experience in coordinating with air operations

Strategic Advisory Groups (SAGs)

SAGs are comprised of representatives from the TxICC and are established to achieve goals and initiatives outlined in the SCIP. Selected accomplishments from each of the SAGs are summarized below:

Texas Statewide Interoperable Channel Plan (TSICP) SAG

The Texas Statewide Interoperable Channel plan was updated in 2020. Changes to the plan include removing the section on Mobile Satellite Phones after this responsibility followed the move of the Texas Division of Emergency Management. Other updates include correcting UAS Coordination channel 7AG68D and updating the Statewide Radio ID plan to migrate the assignment for the 4M ID range to include ETCOG and DETCOG.

Radio over Internet Protocol SAG

The Radio over Internet Protocol (RoIP) SAG developed and applied to the Statewide Emergency Radio Infrastructure grant program to propose the Radio over IP System of Systems Interconnection – Phase 1 project. The project is named the Texas Interoperable Radio Interconnect System (TIRIS). The system will initially connect four Trunked Regional Radio Systems, two DPS Communications Facilities, and one County Communications facility, via a cloud-based server that will provide 10 Statewide Interoperable Talkgroups. The project was awarded funding in October 2020.

Regional Accomplishments

COGs and Tribes reported the accomplishments and challenges below through their annual Focus Group Reports. Several projects have been awarded using the SERI grant program and will be completed in 2021/2022. Appendix B highlights the Focus Group survey results from the COGs and Tribal Nations for 2020.

- Regions reported successful interoperable communications during COVID-19 response and activities
- A Region reported conducting monthly repeater tests from the EOCs within the COG
- Regional Radio Systems continue to expand and upgrade capabilities
- Two regions are in the process of building new P25 Regional Radio Systems
- Regions have increased resiliency by updating backhaul systems, including microwave equipment and transitioning from T1 circuits to fiber, and adding additional generators and UPS for backup power
- Regional Radio System projects are receiving priority rankings at the COG level
- Regions are purchasing P-25 radio equipment, collaborating to share infrastructure, and some are migrating to Regional Radio Systems
- Regions have constructed new tower sites, voting receiver sites, and installed new radio equipment to improve system coverage
- Regions are adding LMR/LTE subscriber radios
- Regions were conducting exercises before the COVID-19 pandemic hit Texas
- Text to 9-1-1 adoption is expanding
- Radio over IP (RoIP) solutions are in use on many Regional Radio Systems
- Mobile Communications Equipment is being upgraded and utilized

Conclusion

Interoperability is essential to public safety and quickly responding to emergencies. While Texas is at an average maturity level, there is still improvement to be made.

As Texas seeks to improve our statewide interoperability maturity level, it is essential to have participation by local jurisdictions, and dedicated funding will help ensure that participation. Currently, Government Code Chapter 421 does not mandate involvement of local governments. This lack of participation contributes to the lack of training, collaboration, standardization, and adoption of the best practices.

Though available federal grant funding again decreased in 2020, additional state grant funding became available. It is anticipated that a corresponding increase in the maturity level will be achieved in future years.

APPENDIX A: VOICE RADIO COMMUNICATIONS INTEROPERABILITY LEVELS ACROSS TEXAS

THE TEXAS STATEWIDE COMMUNICATIONS INTEROPERABILITY MATURITY MODEL

The Texas Statewide Communications Interoperability Maturity Model is based on the SAFECOM Interoperability Continuum.³ The model outlines the evolution from the lowest level to the highest level of communications interoperability (Level One – least interoperable to Level Five – most interoperable). The map of Texas on page 12 highlights the 2020 status of each county regarding their level of interoperability in the "Voice Technology" lane of the model. The status is indicated by the distinctive colors associated with the five levels of interoperability. The information was obtained directly from the 24 COGs and 3 Federally Recognized Tribes in Texas through a survey submitted to TxDPS. As the map indicates, Texas has achieved a Level Three Mid-Range wireless communications interoperability rating on average.

Level One = The lowest level of interoperability, which is accomplished by physically exchanging radios to communicate with other agencies (swap radios).

Level Two = Minimal interoperability, which is accomplished with the use of gateway devices (electronically interconnecting two or more disparate radio systems through gateways).

Level Three = Mid-range interoperability using shared channels.

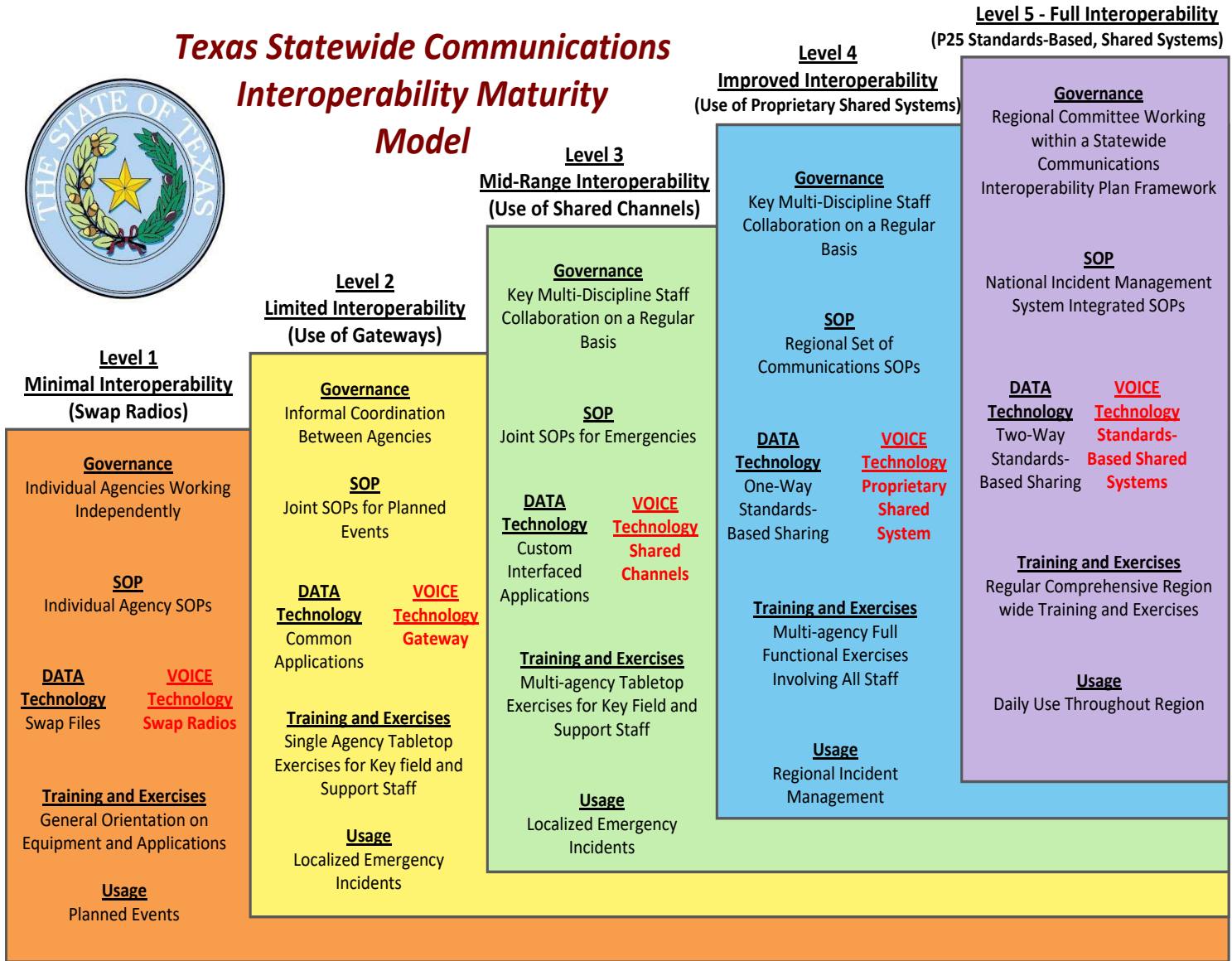
Level Four = Improved interoperability using shared proprietary system(s).

Level Five = The optimal level of full interoperability using P25 standards-based shared systems to communicate with other agencies.

³ <https://www.cisa.gov/publication/interoperability>



Texas Statewide Communications Interoperability Maturity Model



2020

Texas Statewide Voice Communications Interoperability Color-Coded Map by COGs and Counties

COG Region Name	#
Alamo Area Council of Governments	18
Ark-Tex Council of Governments	5
Brazos Valley Council of Governments	13
Capital Area Council of	12
Central Texas Council of Governments	23
Coastal Bend Council of Governments	20
Concho Valley Council of Governments	10
Deep East Texas Council of Governments	14
East Texas Council of Governments	6
Golden Crescent Regional Planning Commission	17
Heart of Texas Council of Governments	11
Houston-Galveston Area	16
Lower Rio Grande Valley Development Council	21
Middle Rio Grande Development Council	24
Nortex Regional Planning Commission	3
North Central Texas Council of Governments	4
Panhandle Regional Planning Commission	1
Permian Basin Regional Planning Commission	9
Rio Grande Council of Governments	8
South East Texas Regional Planning Commission	15
South Plains Association of Governments	2
South Texas Development Council	19
Texoma Council of Governments	22
West Central Texas Council of Governments	7

Texas Statewide Communications Interoperability Maturity Model Color Codes:

Level One (least interoperable) 0 Counties

Level Two 17 Counties

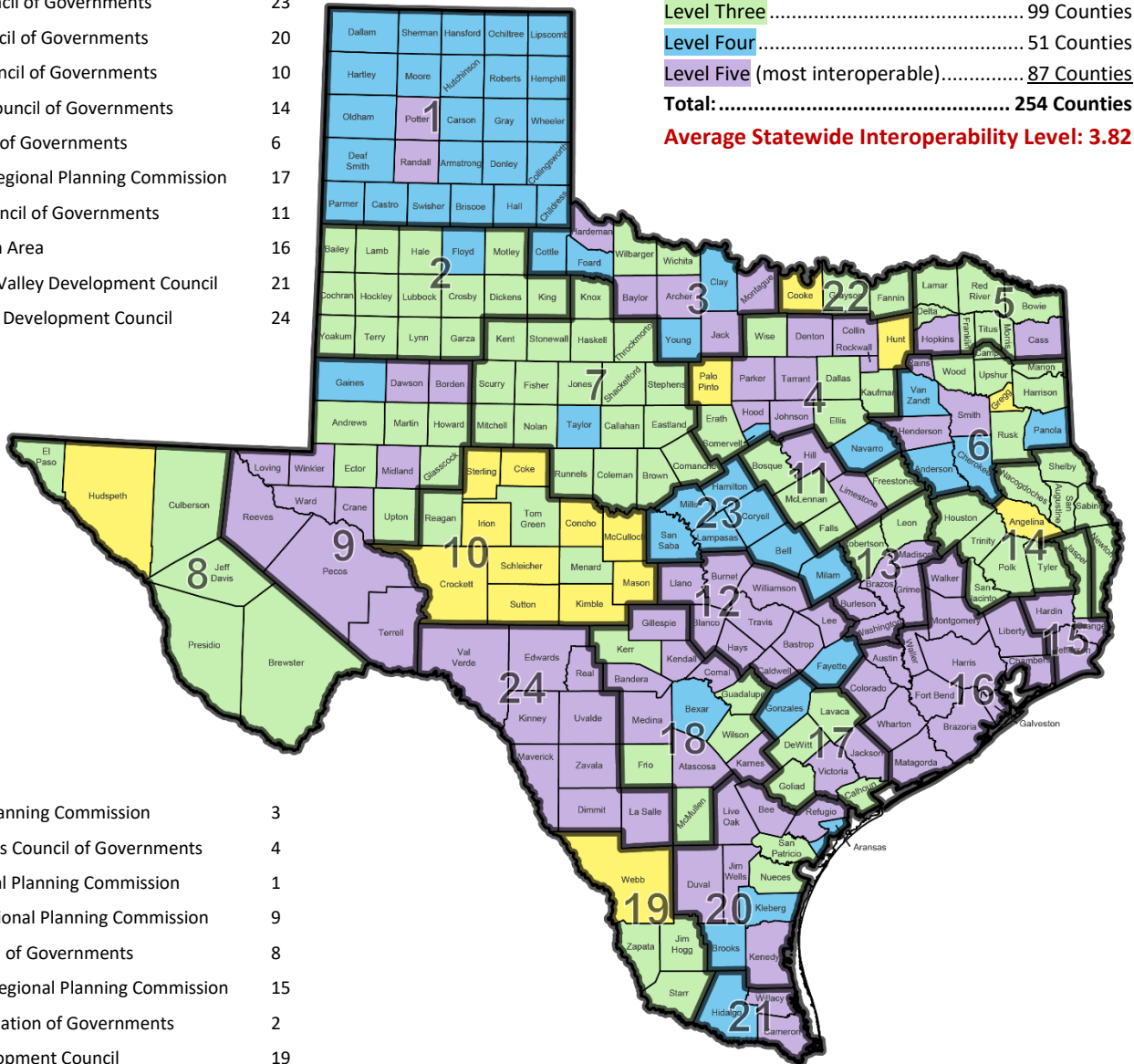
Level Three 99 Counties

Level Four 51 Counties

Level Five (most interoperable) 87 Counties

Total: 254 Counties

Average Statewide Interoperability Level: 3.82



APPENDIX B: 2020 FOCUS GROUP SURVEY RESULTS

Governance

- 96% of Texas COGs and Tribes reported that they have a Homeland Security Committee that meets regularly to set Interoperable Communications priorities
- 66% of the Committees meet as needed, but all meet at least annually
- 54% of Texas COGs have updated contact lists with the SWIC Office
- 87% of Texas COGs reported having met with regional decision makers or elected officials to promote interoperability and support sustainable funding for communications
- Only 31% of Texas COGs participated in a public event displaying communications equipment due to COVID-19 restrictions

Planning and Procedures

- 20 Texas COGs, Tribes and the State Agencies completed the Focus Group Survey
- COGs and Tribes are working to update their Regional Interoperable Communications Plans (RICPs) and SOPs
 - 77% of COGs and Tribes have or are in the process of updating their RICP within the last 3 years
 - 40% of COGs and Tribes have or are in the process of updating their SOP within the last 3 years
- Adoption of the Texas Statewide Interoperability Channel Plan (TSICP) MOU is improving
 - 18% of COGs and Tribes report 0-25% of their agencies have adopted the MOU
 - 9% report 26-50% adoption
 - 31% report 51-75% adoption
 - 41% report 76-100% adoption

Training, Exercises and Evaluation

- 52% of COGs and Tribes reported that they had not conducted a multi-agency communication focused exercise within the last year
 - 14% reported 1-5 agencies participated
 - 33% reported more than 5 agencies participated
 - 52% reported no exercises were conducted within the COG/RPC.
- 67% of COGs and Tribes reported that Communications Drills are conducted on a regular basis and agencies are participating
 - 19 % conduct drills with 1-5 agencies participating
 - 48% conduct drills with more than 5 agencies participating
 - 33% do not conduct drills
- 76% of COGs and Tribes have not reviewed or updated assets and equipment loaded into the CASM database
 - 14% have updated 1-5 agencies in the database

- 10% have updated more than 5 agencies
- 76% have made no updates in the database
- 76% of COGs and Tribes have not designated a point-of-contact for maintaining the list of COMU personnel within the COG or Tribe

Technology and Infrastructure

- COGs and Tribes report that P-25 standards are being adopted for communications infrastructure and subscriber equipment
 - 71% report that 75-100% of their agencies use P-25 equipment
 - 14% report that 50-75% of their agencies use P-25 equipment
 - 15% report that less than 50% of their agencies use P-25 equipment
- COGs and Tribes report that P-25 radios have been programmed in accordance to the TSICP
 - 86% report that 75-100% of their agencies have programmed radios to the TSICP
 - 5% report that 50-75% of their agencies have programmed radios to the TSICP
 - 10% report that less than 25% of their agencies programmed radios to the TSICP
- COGs and Tribes report that many agencies have executed the TSICP MOU
 - 38% report that 75-100% of their agencies have executed the MOU
 - 33% report that 50-75% of their agencies have executed the MOU
 - 10% report that 25-50% of their agencies have executed the MOU
 - 19% report that less than 25% of their agencies have executed the MOU

Communications Coordination

- COGs and Tribes report mixed results with updating Regional SOPs within the last three years
 - 57% report that Regional SOPs have been updated or reviewed
 - 43% report that Regional SOPs have not been updated or reviewed

Cybersecurity

- COGs and Tribes report that agencies are conducting Cybersecurity Threat Assessments
 - 19% report that 75-100% of their agencies have done assessments
 - 33% report that 50-75% of their agencies have done assessments
 - 10% report that 25-50% of their agencies have done assessments
 - 38% report that less than 25% of their agencies have done assessments
- COGs and Tribes indicate that Land Mobile Radio, Broadband Applications, 9-1-1/CAD, Alerts and Warnings and IT Infrastructure are technologies included in cybersecurity threat assessments.
- COGs and Tribes report less success in the development of Cybersecurity Incident Action Plans

- 0% report that 75-100% of their agencies have developed plans
- 24% report that 50-75% of their agencies have developed plans
- 19% report that 25-50% of their agencies have developed plans
- 57% report that less than 25% of their agencies have developed plans

Capability Gaps reported during the COG and Tribe Focus Group survey:

- Funding is the number one gap indicated in the Focus Group survey.
 - M&O costs, P25 subscriber equipment; equipment upgrades; equipment for VFDs and Rural EMS agencies
 - One region would need extensive infrastructure upgrades and approximately 40 million dollars in multiband subscriber equipment to prepare to move to a region-wide system.
 - Funding for monthly Maintenance is required for joining and operating a region/county system. There is a resistance to join a system because of the monthly maintenance costs.
- The ability for Information Sharing is a growing gap.
- Coverage gaps were indicated by additional tower sites needed
- Planning: One area indicated fractured regional planning, indicating that the RICP needs to be updated; another area indicated the need to update their SOP
- Several technology gaps were also indicated:
 - In some cases, vendors may have sold non-P25 compliant hardware to smaller agencies or non-traditional public safety agencies such as ISDs, private EMS, and volunteer services.
 - Finding a solution that will allow us to tie our existing 25 systems together when needed
 - Even if day-to-day needs don't seem to indicate a need to be on a large regional system, jurisdictions are seeing the benefits to join them. There continues to be a push for the concept of breaking down silos and working more cooperatively to achieve this level of interoperability.
 - There is no real infrastructure in the region to support a shared radio system currently. Every agency has their own systems, and all are end of life and barely functioning.
 - In some cases, cities have decided to purchase their own core system and bypass the existing regional system and plan to connect to other Regional Radio Systems

COGs and Tribes reported the following barriers that prevent enhancing interoperability:

- Funding and integration of disparate networks and frequency bands within a region is still a barrier. Keeping up with technology advances both in infrastructure and subscriber units stretch funding too thin
- Radio system coverage issues:
 - Coverage gaps that are present in VHF, become large gaps in the ability to migrate to a 7/800MHz Regional Radio System.
 - Integration of disparate radio systems (VHF vs 7/800Mhz), the increasing need for encryption and GPS and LTE integration
- Securing redundancy in data backhaul and now winterizing and improving backup electrical generation, propane refueling and battery backup systems
- Availability of portable repeaters for major events challenges daily operations.
- Lack of interconnection of radio systems to accomplish roaming between them, or codeplug standardization create interoperability issues

- Some areas report that not all agencies are P25 compliant, and that Programming radios is also a barrier to interoperability
- Training:
 - Lack of First Responders with a basic working knowledge of land mobile radio equipment and infrastructure. Training is offered, but attendance is low and local agencies fail to exercise following the training to maintain the learned skills. Until this type of training and exercise is made mandatory by departments, certification, and licensing organizations, or is utilized as a condition of funding, participation in this type of training will be low.
 - Lack of user training can be a roadblock during an expanding incident