

TEXAS DEPARTMENT OF PUBLIC SAFETY

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August 31, 2020

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 Texas' progress toward public safety communications interoperability. In accordance with Texas Government Code Sections 421.098 and 421.0896, 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/index.htm>

Accomplishments during the 2018-2019 reporting period include:

- Adopting the updated Statewide Communications Interoperability Plan;
- Developing an electronic Texas Field Operation Guide (TXeFOG), available on both the Apple and Google Play Stores;
- Publishing a Public Safety Messaging Position Paper, which outlines a list of 27 technical and functional requirements for effective chat/messaging applications in a public safety environment; and
- Conducting multiple multi-jurisdictional training opportunities.

The 24 Texas Regional Councils of Government (COGs) and 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, additional state grant funding became available, 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 blue ink that reads 'Steven C. McCraw'.

Steve C. McCraw
Director

**Fiscal Year 2018-2019 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 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 the ability for 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.

This report highlights the planning, effectiveness, funding, accomplishments, and challenges of interoperable communications in Texas for 2018 and 2019 as reported by the Texas Department of Public Safety and other state agencies, regional Councils of Governments, and Tribal Nations through the annual Focus Group survey reports.

The reported Level of Interoperability across Texas decreased from 3.87 to 3.85, 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 during this time, including:

- Adopting the updated Statewide Communications Interoperability Plan;
- Developing an electronic Texas Field Operation Guide (TXeFOG), available on both the Apple and Google Play Stores;
- Publishing a Public Safety Messaging Position Paper, which outlines a list of 27 technical and functional requirements for effective chat/messaging applications in a public safety environment; and
- Conducting multiple multi-jurisdictional training opportunities.

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 in 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), work jointly on public safety communications interoperability planning and policy. The TxICC was specifically constituted to examine communication issues across Texas and identify cohesive solutions to address them through the Statewide Communications Interoperability Plan. 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 by prioritizing resources, strengthening governance, and educating and informing 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 to set priorities for the following year. After updates are proposed to the SCIP, the TxICC holds its annual conference to review and vote on the new SCIP and discuss other important public safety communications issues and updates.

The latest version of the SCIP is posted on the Texas Department of Public Safety website.

<https://www.dps.texas.gov/IOD/interop/index.htm>

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. These plans are maintained by each COG/Tribe and are reviewed on a regular basis. Through

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

their annual Regional Focus Group Workshop, COGs and Tribes bring together public safety responders to discuss and 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, ten 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 current status of each county regarding their level of interoperability in the "Voice Technology" lane of the model. As the map indicates, Texas is reporting a level of 3.85 on the Voice Communications lane of the Maturity Model. This is a decrease in maturity from 3.87 in 2016 - 2017. The decline is attributed to several factors, 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 Two 17 Counties
Level Three 86 Counties
Level Four 69 Counties
Level Five (most interoperable) <u>82 Counties</u>
Total: 254 Counties
Average Statewide Interoperability Level: 3.85	

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

Texas jurisdictions were allocated \$7,765,424.50 in 2018 and \$7,951,261.48 in 2019 from the Office of the Governor's Homeland Security Grants Division to spend towards projects and equipment for interoperable emergency communications.

The decade's long trend of decreased DHS grant funding continued in the amounts awarded in 2018 – 2019, where Texas realized a funding decrease of \$2.2M from the previous biennium. This decrease is a primary factor to the minor drop in the average interoperability level.

Communication equipment grant purchase requests are forwarded to the SWIC Office for review to ensure they align with SCIP goals and initiatives.

Accomplishments Toward Interoperability

Representatives from the Texas emergency response community have been working together to overcome the identified communications challenges through the Texas Interoperable Communications Coalition (TxICC) since 2007. The TxICC is the State interoperability governance body and is responsible for planning and oversight of emergency communications interoperability throughout Texas. Outlined below are some of the achievements made through the TxICC, TxDPS, and across the state in 2018 and 2019.

TxICC / Statewide Accomplishments

- Updated the Texas Statewide Communications Interoperable Plan (SCIP) in coordination with the SCIP Executive Council (SEC).
- Conducted various stakeholder engagements:
 - processed 189 TSICP MOUs defining interoperable communications protocols, in 2018;
 - processed 111 TSCIP MOUs establishing interoperable communications protocols, in 2019;
 - approved 112 SWIC grant communications equipment requests in 2018;
 - approved 108 SWIC grant communications equipment requests in 2019; and
 - conducted the TxICC Strategic Planning Conference, State Agency Meetings, System Managers Meetings, and RICP Workshops.
- Developed an electronic Texas Field Operation Guide (TXeFOG), available on both the Apple and Google Play Stores.
- Published a Public Safety Messaging Position Paper, which outlines a list of 27 technical and functional requirements for effective chat/messaging applications in a public safety environment. The paper can be found here:
<https://www.dps.texas.gov/IOD/interop/swicDocuments.htm>

TxDPS Communications Emergency Operations Team (CEOT) Accomplishments

2018:

- Completed 30 deployments, including 24 deployments supporting TxDPS Task Force and Special Operations.
- Organized and/or participated in six in-person exercises, of which one was held in Oklahoma to practice communications set up, usage and operations during emergencies.

2019:

- Completed 19 deployments, including 14 deployments supporting TxDPS Task Force and Special Operations, to include support for the 2019 El Paso Mass Shooting.
- Organized and/or participated in five exercises, of which one was held in Missouri, to practice communications set up and usage during emergencies.

Communications Training Courses offered by TxDPS and DHS/ECD

2018:

- Three Auxiliary Communications classes;
- One Information Technology Service Unit Leader class;
- One Communications Technician class; and
- Five Communications Unit Leader classes.

2019:

- One Information Technology Service Unit Leader class;
- Two Communications Technician classes;
- Six Communications Unit Leader classes; and
- One Incident Tactical Dispatcher class.

Communications Exercises coordinated with TxDPS

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

2018:

- Communications Exercise (COMMEX) in Lubbock, Functional Exercise for completion of Communications Position Task Books. Position task books identify previous experience that is evaluated to obtain state credentialing;
- Natural Disaster Operational Workgroup (NDOW) Exercise in Galveston, focusing on interoperability and situation awareness;
- Nuclear Plant Exercise in Pierce, focusing on interoperability and situational awareness;
- Oklahoma Communications Vehicle Exercise in Shawnee, OK, utilizing command platforms for interoperability;
- Complex Coordinated Terrorist Attacks (CCTA) statewide exercise, focusing on interoperability and situation awareness; and
- Communications Exercise (COMMEX) in Humble, Functional Exercise for completion of Communications Position Task Books. Position task books identify previous experience that is evaluated to obtain state credentialing.

2019:

- North Central Texas COG (NCTCOG) Communications Exercise in Frisco, Regional Communications Exercise, focusing on interoperability;
- TX A&M Winter Institute in College Station, Technology and Application Exercise, focusing on information/data sharing;
- Regional Communications Exercise in Bastrop, focusing on interoperable communications between Federal, State and Local personnel;
- Communications / Interoperability Workshop & Exercise in Tyler, Regional Communications Exercise, focusing on regional interoperability; and
- Central States Communications Exercise in Quapaw, OK, a large multi-state interoperable Communications exercise and Communications Position Task Books exercise.

Strategic Advisory Groups (SAGs)

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

Texas Statewide Interoperable Channel Plan (TSICP) SAG

The Texas Statewide Interoperable Channel plan was updated in 2019. Changes made to the plan include clarifications and updates to technical specifications and requirements for interoperability and resulted in TSICP alignment with the national strategy, incorporated Unmanned Aircraft Systems (UAS) coordination planning, and updated on-scene communications protocols.

Broadband Applications and Information Sharing SAG

The Broadband SAG was formed and published a position paper on the need to identify standards and requirements for public safety messaging. Recognizing that data interoperability is a broad and complex topic, the TXICC chose to approach different types of applications one at a time. Based on emerging national trends and observations of public safety broadband deployments in Texas, the group chose to focus initially on messaging applications.

Radio over Internet Protocol SAG

The Radio over Internet Protocol (RoIP) SAG was formed to define RoIP for interoperability. The RoIP SAG developed technical recommendations for the Statewide Interoperability Coordinator, which included pros & cons and costs to implement a statewide System-of-Systems interoperability solution considering Land Mobile Radio (LMR) and Long Term Evolution (LTE) technologies including their convergence.

Regional Accomplishments

COGs and Tribes reported the accomplishments and challenges below through their annual Focus Group Reports. Appendix B highlights the Focus Group survey results from the COGs and Tribal Nations.

- Regional Radio Systems continue to expand and upgrade capabilities;
- Regional Radio System projects are receiving priority rankings at the COG level;
- Regions are purchasing P-25 radio equipment;

- Regions are conducting exercises;
- Text to 9-1-1 adoption is expanding;
- Radio over IP (RoIP) solutions are in use on many Regional Radio Systems; and
- 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, participation by local governments is not mandated in Government Code Chapter 421. This contributes to the lack of training, collaboration, standardization and adoption of the best practices.

Though available federal grant funding decreased in this reporting period, in 2020, additional state grant funding became available, so we anticipate a corresponding increase in the maturity level for 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 current 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 through a survey submitted to TxDPS. As the map indicates, Texas has achieved a Level Three (Improved) 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 through the use of shared channels.

Level Four = Improved interoperability through the use of shared proprietary system(s).

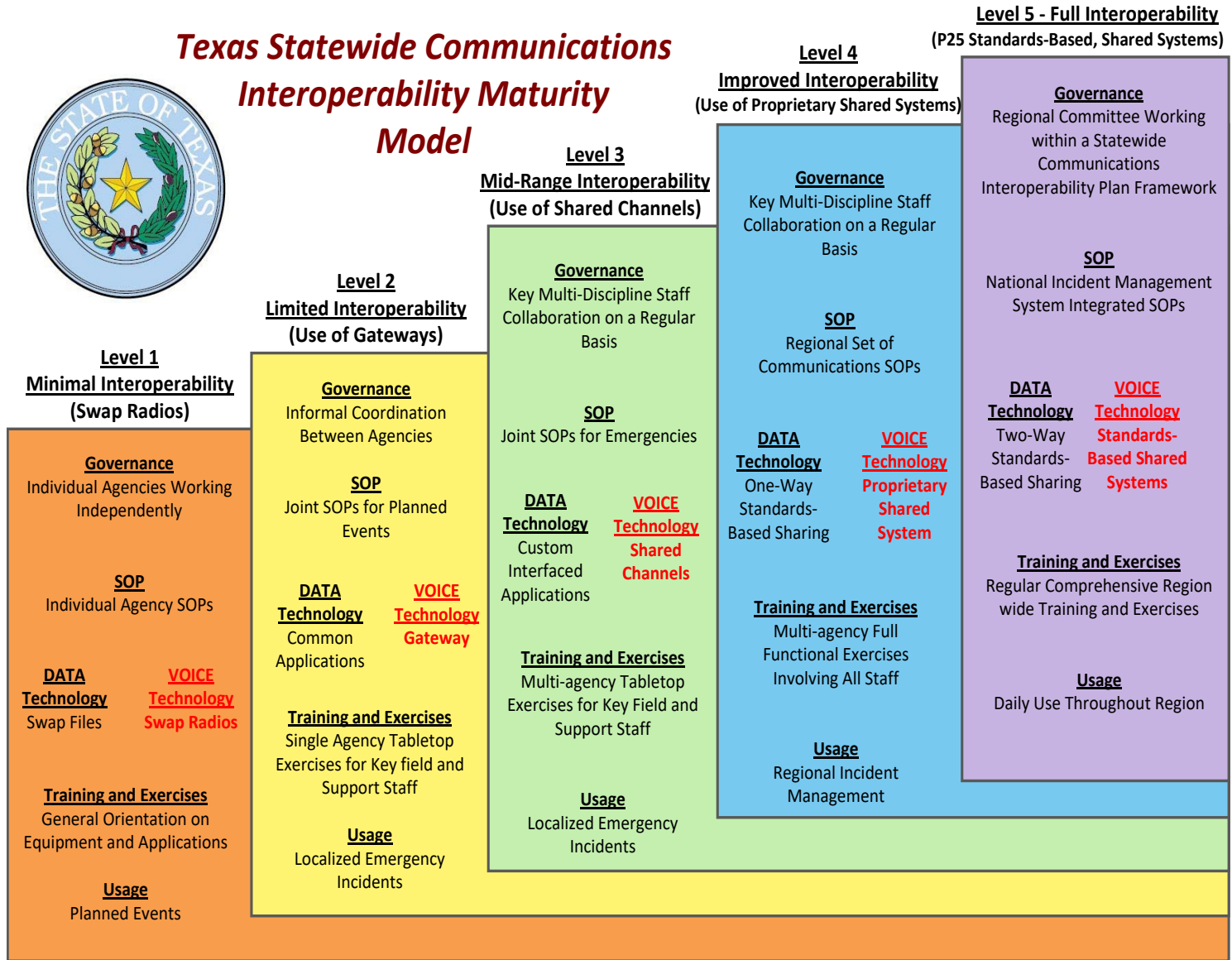
Level Five = The optimal level of full interoperability through the use of P25 standards-based shared systems to communicate with other agencies.

The color-coded map on page 12 reflects a snapshot of each county's status of voice communications interoperability. This information was obtained directly from the 24 COGs through a survey submitted to TxDPS. As the map indicates, Texas has maintained slightly above Level Three (Improved) wireless communications interoperability on average. However, for 2018-2019, Texas is reporting a lower level of 3.85 on the Voice Communications lane of the Maturity Model. This is a decrease in maturity from 3.87 in 2016 - 2017. The decline is attributed to several factors, including a reduction in federal grant funding, natural disasters, and operational/technical challenges in specific areas of the state.

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



Texas Statewide Communications Interoperability Maturity Model



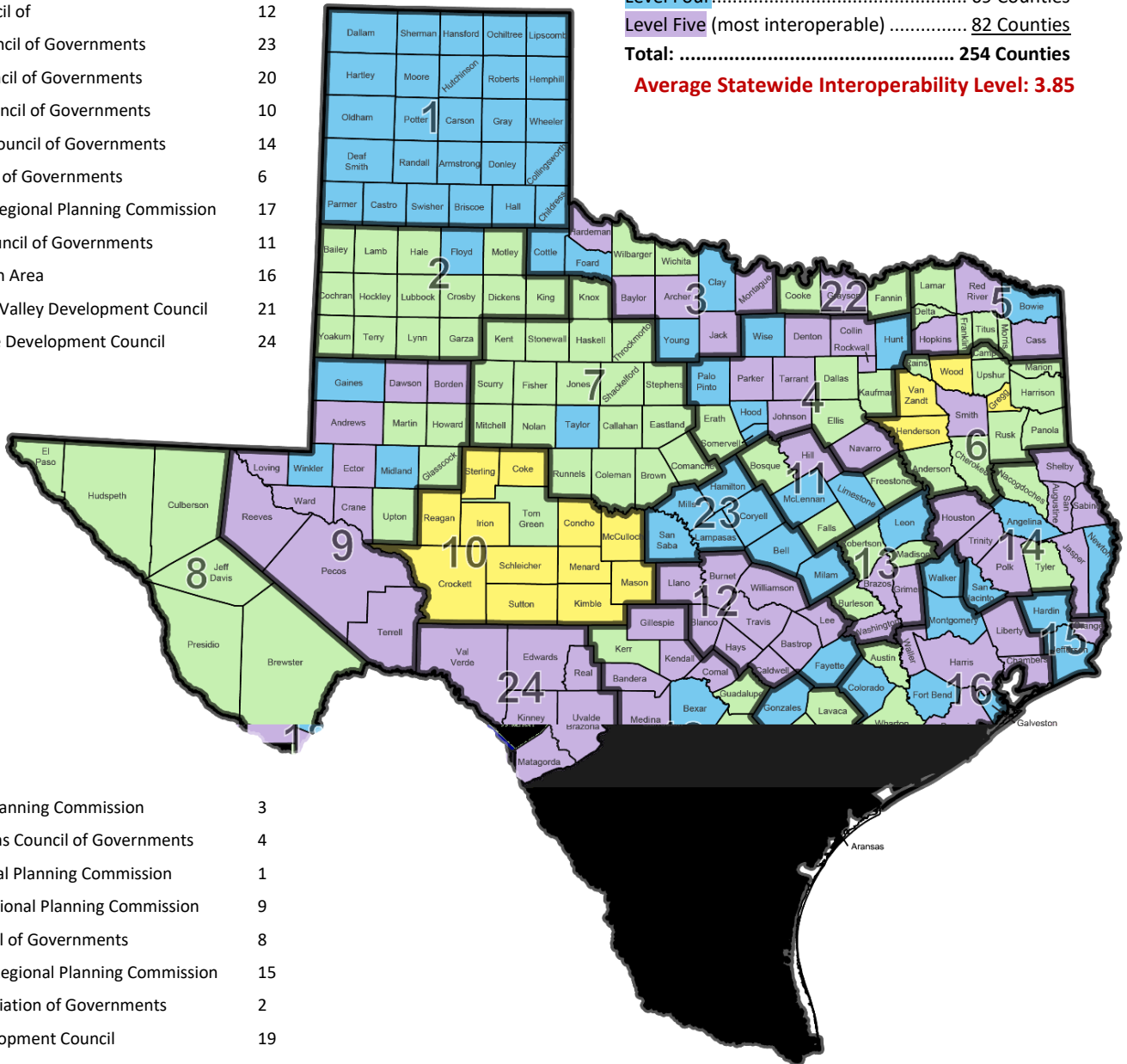
2018-2019

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:

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Level Two	17 Counties
Level Three	86 Counties
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Total:	254 Counties
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APPENDIX B: 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.
- COGs strive to have adequate attendance and representation by local agencies:
 - 19% were attended by <25% of member agencies;
 - 15% were attended by 25-50%;
 - 27% were attended by 50-75%;
 - 31% were attended by >75%; and
 - 8% were unsure.

Planning and Procedures

- COGs and Tribes are working to update their Regional Interoperable Communications Plans (RICPs) and SOPs.
 - 60% of COGs and Tribes have or are in the process of updating their RICP within the last 3 years;
 - 50% of COGs and Tribes have or are in the process of updating their SOP within the last 3 years, with 48% having used the template provided by the SWIC Office.
- Adoption of the Texas Statewide Interoperability Channel Plan (TSICP) MOU is mixed.
 - 25% of COGs and Tribes report 0-25% of their agencies have adopted the MOU;
 - 21% report 26-50% adoption;
 - 25% report 51-75% adoption; and
 - 29% report 76-100% adoption.

Training, Exercises and Evaluation

- 76% of COGs and Tribes conducted a multi-agency communications focused exercise within the last 2 years.
 - 29% reported 2-5 agencies participated;
 - 8% reported 6-10 agencies participated;
 - 33% reported 11+ agencies participated; and
 - 29% were unsure.
- 75% of COGs and Tribes did not use or were unsure if their SOP was used in the exercise. Communications Drills are conducted on a regular basis by 73% of COGs and Tribes.
 - 26 % conduct drills 1-5 times per year;
 - 13% conduct drills 6-10 times per year;
 - 30% conduct drills 11+ times per year; and
 - 30% were unsure.

Technology and Infrastructure

- COGs and Tribes report that P-25 standards are being adopted for communications infrastructure and subscriber equipment
 - 76% report that 75-100% of their agencies use P-25 equipment;
 - 12% report that 51-75% of their agencies use P-25 equipment; and
 - 12% report that 26-50% of their agencies use P-25 equipment.

Communications Coordination

- 67% of COGs and Tribes have participated in planned events or other demonstrations where the communications assets of the area were on display to the public.
- Agencies within COGs are programming interoperability channels into radio equipment.
 - 71% of COGs indicate 76-100% of their agencies have channels programmed;
 - 21% indicate 51-75% of their agencies have channels programmed; and
 - 8% indicate 26-50% of their agencies have channels programmed.
- Communications infrastructure information has generally not been updated in the Communication Assets Survey and Mapping Tool (CASM) within the last three years.
 - 57% of COGs and Tribes report that 0-25% of agencies have updated CASM;
 - 30% report that 26-50% of agencies have updated CASM;
 - 9% report that 51-75% of agencies have updated CASM; and
 - 4% report that 76-100% of agencies have updated CASM.

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

- Training for LMR operations is still lacking. While the training materials have been available for many years, there are still a large number of first responders that do not understand what interoperability channels are used for and when they should be used.
- Agency administrators should make interoperability training mandatory for any personnel that operates a land mobile radio.
- Outdated equipment is hindering communication advancements.
- Continue the emphasis on the expansion of the regional public-safety P25 trunked system.
- The ability to move toward LMR over LTE is impossible until the broadband infrastructure in the region is greatly improved.
- Continue to emphasize the need for agencies to collaborate more on broadband applications.
- Inadequate funding hinders construction of needed infrastructure and radio equipment replacements.

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

- Training on Radio Basics and interoperability down to the end user level;
- Exercising the use of interoperability systems within the agency and region;
- Standardization of interoperable equipment and communication in our region;
- Lack of best practices for communications outside the home jurisdiction;
- Lack of executive/administration "buy-in" and support for funding equipment;
- The overall governance and operating culture does not support interoperability;

- Lack of recognition by accrediting agencies of the need for mandated basic radio training;
and
- The lack of adoption by agencies that prefer less-expensive legacy analog systems.