LEGISLATIVE BUDGET BOARD

Radio Interoperability Study

PREPARED BY LEGISLATIVE BUDGET BOARD STAFF

FEBRUARY 2017

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RADIO INTEROPERABILITY STUDY

After the terrorist attacks on September 11, 2001, both the federal and Texas state governments made attaining higher levels of wireless interoperability among local, state, and federal first responders a major public safety communications priority. Communications interoperability capability is a core component of the majority of established Incident Command Systems. However, attaining full radio interoperability is a procedurally complicated and costly process. Moving the state toward full wireless interoperability will require the continued development of a single statewide "System of Systems" to link communication systems at local levels.

The General Appropriations Act (2016–17 biennium), Article X, House of Representatives, Rider 9, requires the Legislative Budget Board to study "the possibility of having all Texas law enforcement agencies and all state agencies either purchasing or leasing similar radio systems establish one contract to identify possible cost containment or savings." State and local law enforcement agencies currently contract for radio interoperability system services and equipment individually, using cooperative contracts through the Department of Information Resources when possible. Without data about local entities' interoperability needs, funding sources, contract information, and expenditures, the state cannot fully leverage its buying power to negotiate additional contracts for interoperability services or equipment.

FACTS AND FINDINGS

- The Texas Department of Public Safety reports there are more than 5,300 first responding agencies in Texas, consisting primarily of fire, police, and emergency medical services, that would be incorporated into any statewide plan to attain full radio interoperability. The number of law enforcement agencies only is 2,645.
- The federal government uses a five-level "Interoperability Continuum" to gauge interoperability attainment, ranging from Level 1 (exchanging radios) to Level 5 ("Project 25 Standards-Based" or full interoperability). As of 2015, 63 of 254 Texas counties, representing about 23.0 percent of the Texas population, reported Level 5 wireless communications interoperability. The Department of Public Safety reports that Texas' statewide interoperability level has not improved since 2014, remaining at a 3.85 level. Weighting counties by population when calculating the all-Texas county average yields a slightly higher statewide interoperability level of 4.04 in fiscal year 2015.
- In 2007, a federal Public Safety Interoperable Communications grant of $65.1 million funded a significant portion of the initial costs of attaining interoperability in Texas. However, after this initial allocation, no subsequent federal funding has been provided for the specific purpose for improving Interoperability.
- In 2011, Texas' 24 Councils of Government estimated a total cost of $1.42 billion to attain Level 5 interoperability across the state. Based on data submitted by the Department of Public Safety and the Office of the Governor, in the fiscal years 2008 to 2016 period, an estimated $403.7 million in federal and state funds were awarded to further interoperability attainment statewide. There is currently no method in place to account for local funds raised and expended for interoperability-related purposes.
- Increasing communications interoperability in Texas is facilitated by the Department of Public Safety's Statewide Communications Interoperability Coordinator, a position appointed by the Governor, and by the Texas Interoperable Communications Coalition, a volunteer group comprised of over 130 state and local entities established by the Department of Public Safety to "facilitate the planning, developing, and financing of a statewide interoperable public safety wireless communication system."
- The Texas Interoperable Communications Coalition is developing a single "System of Systems" framework that would enable Level 5 wireless communications interoperability among Texas' diverse regional emergency first responder networks.

DISCUSSION

Radio, or wireless, interoperability is defined by the Department of Public Safety (DPS) as "the ability of first responders to communicate across disciplines, to exchange voice and/or data with one another on demand, in real time, as authorized." Interoperable communication enables diverse entities, such as police and fire safety agencies from different jurisdictions, to orchestrate efficiently first responder activity to both local incidents and larger scale emergencies. First responders include commissioned law enforcement officers, professional firefighting personnel, certain volunteer firefighters, certified emergency medical services personnel, and in some cases, emergency management coordinators. In addition to these public safety first responders, the Department of Homeland Security also recommends interoperability capability for certain service agencies (e.g., hospital, transportation, and public works entities).

Interoperable communications typically are organized into functional networks, including command, tactical/operational, support, air-to-ground, and air-to-air networks. Communications interoperability means that individuals from different jurisdictions and disciplines can communicate clearly in real time within, between, and among these networks. Currently, the core focus of interoperability expansion is on voice, or radio, communications. However, Texas first responder stakeholders are aware that in the near future interoperable communications will need to be expanded to include two-way transmissions of voice data in real time, as the federal government implements the bandwidth associated with broadband Long Term Evolution (LTE). LTE, also called "4-G" for "Fourth Generation," refers to a type of wireless communication that uses a combination of newer communication protocols and technologies to provide faster data transfer capabilities.

Attaining greater radio interoperable communications is a large-scale initiative when viewed from a statewide perspective. DPS reports that there are more than 5,300 first responding agencies that exist in Texas jurisdictions at various levels of radio interoperability capability. According to the Texas Commission on Law Enforcement, the number of law enforcement agencies alone is 2,645. Further, DPS reports that Texas possesses certain characteristics that add challenges to attaining full interoperable radio communication capability. These characteristics include:

- A vast geographic area of 268,601 square miles and a population of more than 27 million;
- An infrastructure that includes more than 2,500 critical infrastructure facilities, including 23 commercial airports, and the largest highway and rail systems in the nation;
- Extensive industrial production facilities, including the nation's largest petrochemical refining and production complexes, as well as 19 major military bases and an active nuclear weapons plant.

Given these factors, furthering radio interoperability in Texas has historically centered on the creation of regional plans, primarily facilitated by Texas' 24 Councils of Government, which are designed to align local needs and resources with statewide and federal interoperability goals.

While attaining higher levels of radio interoperability became a major federal and state priority following the terrorist attacks on September 11, 2001, the Texas Legislature had already initiated the process of increasing interoperable communications capability earlier that same year. Specifically, the Seventy-seventh Legislature, Regular Session, 2001, called for an Interagency Radio Work Group (IRWG) to develop a plan for a state agency communications network. The IRWG produced a preliminary plan in 2001, and later that year expanded that plan to include all public safety agencies in the state. This plan, entitled "Interagency Radio Comprehensive Interoperability Plan," was completed in early 2003.

In 2007, the U.S. Federal Safety Commission, as a condition of awarding federal Public Safety Interoperable Communications grants, required states to establish broadly inclusive state and regional interoperability advisory committees, and to develop a detailed Statewide Comprehensive Interoperability Plan (SCIP). As a result, DPS formally established the Texas Radio Coalition (TRC) and the position of Statewide Interoperability Coordinator (SWIC) in 2007. In 2010 the TRC's scope was further expanded to include planning for the federal government's Public Safety Broadband Long Term Evolution initiative, and renamed TRC to the Texas Interoperable Communications Coalition (TxICC).

TxICC's primary goal is to raise Texas' statewide level of radio interoperability attainment to a "Project 25 Standards Based" interoperable communications standard. Project 25 (or P-25) is a collection of digital radio communications technical standards incorporated into the digital radio systems used by first responding agencies to allow these agencies to communicate in emergencies. P-25 compliant

radio systems allow agencies to communicate between and among other agencies similarly equipped with P-25 compliant radio systems. However, in addition to P-25 technical compatibility, interoperable communications capability also requires parallel development in several additional elements composing interoperable capability.

INTEROPERABILITY PROGRESSION

Texas has made progress in improving interoperability, although progress has slowed since 2014. Gauging a region's relative level of interoperability attainment requires identifying the elements composing interoperable functionality. To this end, the Department of Homeland Security's SAFECOM program has established a ranking methodology to gauge a region's level of interoperability using a progressive continuum of interoperability attainment within each of five separate elements. These elements are summarized in **Figure 1**.

The elements noted in **Figure 1** are arrayed along a five-point continuum indicating progressively greater degrees of interoperability capacity for each element. As shown in **Figure 2**, interoperability is a multi-dimensional commitment that extends significantly beyond the simple acquisition of the "right radios." Attaining Level 5 interoperability, for example, requires well-developed regional governance structures, operating procedures based on national standards, standards-based voice and data sharing systems, regular large-scale field exercises to test equipment and staff readiness, and experience in the regular use of interoperable communications for daily, or routine, communications. This methodology is intended to assist jurisdictions in establishing interoperability goals and provide a means to track progress toward those goals.

DPS reports an average all-county interoperability level of 3.85 for the state as a whole in 2015. Earlier average interoperability levels suggest the state made significant initial progress in increasing interoperability capacity from 3.2 in 2010 to 3.8 in 2014, when level attainment progress stalled.

DPS calculates the statewide interoperability attainment score by averaging the attainment score for all 254 Texas counties. However, this approach weights all counties equally when calculating the average, while Texas counties vary widely by population. For example, the 10 most populous Texas counties comprise over 59 percent of the state's population, and over 190 Texas counties have populations below 50,000. **Figure 3** shows that weighting counties by population when calculating the all-Texas county average yields a slightly higher statewide interoperability level of 4.04 in fiscal year 2015.

Based on 2015 data submitted to DPS by Texas' 24 Councils of Government, DPS reports that 63 of Texas' 254 counties reported attaining a Level 5 degree of interoperability. **Figure 3** also shows that in 2015, 167 of 254 Texas counties, covering 82.1 percent of the Texas population, reported Level 4 or Level 5 interoperability attainment, and 87 counties, covering 18.0 percent of the Texas population, reported Level 2 or Level 3 interoperability attainment. No counties reported a Level 1 attainment score.

FIGURE 1
ELEMENTS COMPRISING THE INTEROPERABILITY CONTINUUM IN 2016

ELEMENT	DESCRIPTION
Governance	Common governance structures across local, state, tribal, and federal governments, as well as pertinent emergency response entities, to improve cooperation and communication; establish operating guidelines; and reduce jurisdictional conflicts.
Standard Operating Procedures	Policies, practices, and procedures that enable emergency responders to coordinate incident response across disciplines (e.g., fire protection and law enforcement) and jurisdictions (e.g., county and municipal entities).
Technology	Secure voice and data communications technology that is designed to allow emergency responders to share voice and data information while being scalable to meet larger disaster incident needs.
Training and Exercises	Train responder staff in the use of interoperable communications technology and provide designated Communication Unit Leaders with in-depth training to manage incident communications. Hold field exercises for first responder and supervisory staff to ensure the technology works and staff are able to communicate effectively.
Usage	Frequency interoperable communications technology is used between and among disciplines and jurisdictions for both routine and emergency incidents.

SOURCE: U.S. Department of Homeland Security.

FIGURE 2
INTEROPERABILITY CONTINUUM

INTEROPERABILITY ELEMENT		LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
Governance		Individual agencies working independently	Informal coordination between agencies	Key multi-discipline staff collaboration on a regular basis		Regional committee within statewide inter-operability framework
Standard Operating Procedures (SOPs)		Individual agency SOPs	Joint SOPs for planned events	Joint SOPs for emergencies	Regional set of Communications SOPs	National incident management system, integrated SOPs
Technology	Data	Exchange of stand-alone files	Common proprietary applications	Custom-interfaced applications	One-way standards based sharing	Two-way standards-based sharing
	Voice	Exchange of radios/cached radios	Gateway - transmit across multiple frequencies	Shared channels - common frequency band	Regional propriety shared system	Standards-based sharing system
Training and Exercises		General orientation on equipment and applications	Single agency tabletop exercises for key staff	Multi-agency tabletop exercises for key staff	Multi-agency full functional exercises with all staff	Regular comprehensive regionwide training and exercises
Usage		Planned events	Localized emergency incidents	Regional incident management		Daily use throughout region

SOURCE: U.S. Department of Homeland Security.

FIGURE 3
TEXAS COUNTIES BY INTEROPERABILITY CONTINUUM SCORE & POPULATION, FISCAL YEAR 2015

CONTINUUM SCORE	POPULATION	PERCENTAGE OF TEXAS POPULATION	NUMBER OF COUNTIES	DPS AVERAGE (BY COUNTIES)	WEIGHTED AVERAGE (BY POPULATION)
5	6,313,507	23.0%	63	1.24	1.15
4	16,220,794	59.1%	104	1.64	2.36
3	4,692,648	17.1%	72	0.85	0.51
2	242,165	0.9%	15	0.12	0.02
1	0	0.0%	0	0.00	0.00
TOTALS	**27,469,114**	**100.0%**	**254**	**3.85**	**4.04**

SOURCES: Department of Public Safety, U.S. Census Bureau.

LEADERSHIP AND OVERSIGHT

The TxICC, the entity primarily involved in furthering radio interoperability, is comprised entirely of approximately 130 volunteer agencies. Compliance with TxICC standards is not required by law. However, Government Code, Sec. 421.096, requires the Office of the Governor to assume the primary leadership role in planning and facilitating the state's progress toward greater radio interoperability:

> INTEROPERABILITY OF RADIO SYSTEMS. The office of the governor shall: (1) develop and administer a strategic plan to design and implement a statewide integrated public safety radio communications system that promotes interoperability within and between local, state, and federal agencies and first responders; (2) develop and administer a plan in accordance with Subdivision (1) to purchase infrastructure equipment for state and local agencies and first responders; (3) advise representatives of entities in this state that are involved in homeland security activities with respect to interoperability; and (4) use appropriated money, including money from relevant federal homeland security grants, for the purposes of designing,

implementing, and maintaining a statewide integrated public safety radio communications system.

The Office of the Governor is advised on radio interoperability by the First Responder Advisory Council (FRAC), a permanent special advisory committee currently comprised of representatives from 15 state and local agencies. One of the members of this committee is the SWIC, who is currently employed by DPS. Meeting minutes from several years of FRAC meetings indicate that the SWIC has taken an active role in informing FRAC of developments in interoperability attainment.

The TxICC has no direct statutory basis, nor does TxICC receive direct state appropriations to recover costs associated with voluntary participation in TxICC activities. These activities include updating the SCIP, facilitating progress toward greater interoperability, and planning for the Public Safety Broadband Long Term Evolution initiative. Chaired by the SWIC and guided by the TxICC's Executive Committee, TxICC conducts the majority of its technical work through the activities of the following Strategic Advisory Groups:

- Texas Statewide Interoperable Channel Plan (TSICP)
- Texas Communications Field Operations Guide
- Cache Radio Training
- Regional Standard Operating Procedures Training

TxICC also provides the technical expertise used to develop and update the state's annual SCIP. Required by the federal government and by Texas statute, SCIP is the main planning tool used to provide direction to Texas public safety agencies on improving interoperable communications capabilities across the state.

TxICC's main goal is to develop a "System of Systems" communications infrastructure to provide all Texas' first responder agencies with Level 5 interoperable communications capability. One of TxICC's Strategic Advisory Groups is currently working to design this system. The "System of Systems" model would network regional emergency communication systems through a central communications hub administered by DPS. Because of the cost of creating a single statewide communications network, as well as Texas' regional diversity, this model leverages, rather than supplants, existing communications systems and physical infrastructure. This approach maintains locally oriented systems, and does not replace locally negotiated inter-local communications agreements. This approach links relatively simple systems into a more complex system, instead of replacing the relatively simple regional systems with something new and more complex.

FUNDING FOR INTEROPERABILITY

Federal, state, and local sources have provided funding for radio interoperability. Based on data submitted by DPS and the Office of the Governor, in the fiscal year 2008–16 period, an estimated $401.2 million in federal, state, and local funds have been awarded through various grant programs and provided through matching funds to further interoperability attainment statewide. Additionally, the state has provided $2.5 million in state funds for this purpose. However, the amount of funding spent by local entities on interoperability is not centrally tracked and is unknown.

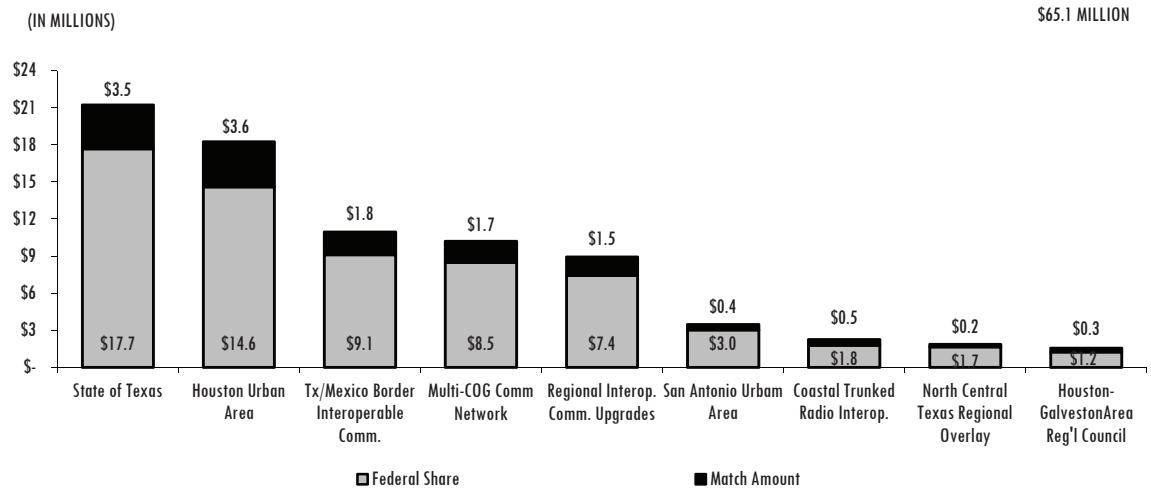
FEDERAL FUNDING

Historically, the majority of the funding provided to increase interoperability was provided through grants by the federal government, largely in response to the 9/11 Commission's recommendations to increase interagency communications interoperability.

In 2005, the federal government established and funded the largest of these grant programs, the Public Safety Interoperable Communications (PSIC) Grant Program, through the enactment of the Digital Television Transition and Public Safety Act and the Deficit Reduction Act, respectively. On September 30, 2007, the PSIC Grant Program awarded $968.4 million to fund the acquisition of, planning and coordination of, deployment of, or training for the use of interoperable communications systems in the U.S. These funds were intended to help first responders improve public safety communications during natural or human-made disasters. The PSIC Grant Program was a one-time grant program that allowed entities until 2012 to expend fully their grant awards. Additionally, recipient entities were also required to match 20 percent of the grant's total value with funds provided by the entity. Finally, as noted earlier, recipient states and U.S. Territories were required to provide a SCIP. In September 2007, Texas state and local entities received $65.1 million in PSIC grant awards, and provided $13.6 million in state and local matching funds. **Figure 4** shows the grant awards.

The PSIC grants awarded to the state of Texas were used to procure a pre-positioned cache of interoperable equipment including communications response trailers, fully inter-operable portable radios, portable generators, portable

FIGURE 4
PUBLIC SAFETY INTEROPERABLE COMMUNICATIONS GRANT PROGRAM TEXAS AWARDS, FISCAL YEARS 2008 TO 2013



SOURCE: U.S. Department of Commerce.

gateway devices, and satellite telephones and radios. Additionally, PSIC grants were also used for developing a statewide approach to increase interoperability capacity. Expenditures for this purpose included acquisition of a statewide P-25 overlay system; additional communications sites along the Mexican border; P-25-compatable radios; and mobile gateway switches to allow interoperable connectivity among mutual aid channels.

The remaining PSIC grants were awarded to regional groups for use in furthering interoperability capability within regions and were tailored to the specific requirements of each region. For example, the $9.1 million award to the Texas–Mexico Border Interoperable Communications group focused on eliminating communications gaps along the border with Mexico by replacing aging infrastructure, orchestrating disparate radio systems spanning numerous frequency bands, expanding roaming capability, and mitigating radio interference from both sides of the border. By contrast, many of the first responding agencies in the San Antonio region already possess a shared communications system. As such, the $3.0 million PSIC award to the San Antonio Urban Area group focused on adding P-25-compliant and other infrastructure to expand this shared communications system beyond Bexar County, to include the Alamo Area Council of Government, Capital Area Planning Council, and Lower Colorado River Authority.

In addition to the PSIC grants, which were dedicated solely to furthering radio interoperability, the Office of the Governor has used its discretion regarding certain federal funds to provide grants for radio interoperability through the administration of two additional federally funded grant programs: the Byrne Justice Assistance Grant Program and the Homeland Security Grant Program. In the fiscal years 2008 to 2016 period, $322.5 million in federally funded grants from these two programs were awarded to state and local entities.

Since at least fiscal year 2008, the Office of the Governor has administered grants from several federal sources to increase the state's interoperable communications capacity. Specifically, in the fiscal years 2008 to 2016 period, the Office of the Governor's Criminal Justice Division (CJD) awarded Byrne Justice Assistance Grants totaling $17.5 million to 173 state and local entities to further interoperable communications capacity. However, most of this amount is attributable to the one-time inclusion of $13.3 million in American Recovery and Reinvestment Act (ARRA) funds expended in fiscal years 2010–13. Excluding these ARRA funds, CJD grants for interoperability-related projects averaged $0.7 million per fiscal year in the fiscal years 2012 to 2016 period. **Figure 5** shows the amounts awarded and number of projects for the fiscal years 2008 to 2016 period.

In addition to grants from the CJD, the Office of the Governor's Homeland Security Grant Program (HSGP) also administers federal grant awards for interoperable radio communications. In the federal fiscal year 2008–16 period, HSGP awarded 1,988 grants totaling $305.0 million to 547 state and local entities for purposes broadly related to enhancing interoperable radio communication. **Figure 6**

FIGURE 5
CRIMINAL JUSTICE DIVISION FEDERALLY FUNDED GRANT AWARDS FOR INTEROPERABILITY FISCAL YEARS 2008 TO 2016

FISCAL YEAR	NUMBER OF AWARDS	ALL FUNDS (EXCEPT ARRA)	ARRA FUNDS ONLY	TOTAL AWARDED
2008	1	$44,776	$-	$44,776
2009	1	$10,568	-	-
2010	32	$362,605	$12,140,050	$12,502,656
2011	3	$79,311	$608,472	$687,783
2012	10	$694,282	$48,875	$743,157
2013	9	$682,328	$498,150	$1,180,478
2014	11	$692,400	-	$692,400
2015	9	$511,051	-	$511,051
2016	11	$777,308	-	$777,308
TOTAL	**87**	**$4,194,485**	**$13,295,548**	**$17,490,032**

NOTE: ARRA = American Recovery and Reinvestment Act.
SOURCE: Office of the Governor's Criminal Justice Division.

FIGURE 6
STATE HOMELAND SECURITY GRANT AWARDS FOR INTEROPERABILITY, FEDERAL FISCAL YEARS 2008 TO 2016

FEDERAL FISCAL YEAR	NUMBER OF AWARDS	HIGHEST AMOUNT AWARDED	LOWEST AMOUNT AWARDED	AVERAGE AMOUNT AWARDED	MEDIAN AMOUNT AWARDED	TOTAL AWARDED
2008	252	$7,962,679	$426	$172,725	$53,679	$43,526,661
2009	330	$7,736,920	$71	$189,125	$50,863	$62,411,378
2010	390	$6,628,306	$550	$175,266	$64,566	$68,353,597
2011	289	$8,127,314	$106	$167,425	$25,000	$48,385,810
2012	154	$5,271,714	$1,474	$151,245	$34,300	$23,291,692
2013	165	$4,738,951	$700	$114,448	$33,600	$18,883,953
2014	183	$1,890,717	$1,201	$93,217	$29,879	$17,058,745
2015	124	$1,381,693	$2,500	$93,436	$38,332	$11,586,116
2016	101	$3,019,536	$2,389	$113,459	$42,767	$11,459,382
TOTAL	**1,988**					**$304,957,334**

SOURCE: Office of the Governor's Homeland Security Grants Division.

provides a historical analysis of this grant program. Grants awarded by HSGP for increasing radio interoperability have declined significantly from the peak award year of 2010, in which 390 grants totaling $68.4 million were made. Future HSGP awards for interoperability may further decrease beginning in federal fiscal year 2017 as the U.S. Department of Homeland Security Grants Division has indicated it intends to restrict a portion of the 2017 Homeland Security Grants Program awards to activities that more closely align with certain terrorism prevention initiatives, as opposed to broader law enforcement initiatives, such as interoperability.

STATE FUNDING

As referenced above, $13.6 million in state and local funds were provided to match the federally funded PSIC grant award. Additionally, in the fiscal years 2008 to 2016 period, the Office of the Governor's CJD awarded three state funded grants totaling $350,000. Specifically, these grants were funded through the State Criminal Justice Planning fund and the County Essential Services fund. While both grant programs are for wide a range criminal justice related matters, the three awards were made for the specific purpose of purchasing new and/or enhancing existing radio interoperability systems.

The Legislature has provided $2.5 million in state funds to fund the state's facilitating role in enhancing Texas' overall radio interoperability capacity. To provide a dedicated source of state funds to increase interoperable communications, House Bill 442, Eighty-second Legislature, Regular Session, 2011, created the General Revenue–Dedicated Account 5153, Emergency Radio Infrastructure (Fund 5153), to:

- provide for the planning, development, provision, enhancement, or ongoing maintenance of an interoperable statewide emergency radio infrastructure;
- support the goals in the statewide integrated public safety radio communications plan;
- develop a regional or state interoperable radio communication system fund grants by DPS to certain regional Councils of Government and state agencies requiring emergency radio infrastructure; or
- other public safety purposes.

Revenues for Fund 5153 are generated from a 5.5904 percent share of total court cost collections in each fiscal year. Court costs collections have steadily decreased as a revenue source over the last three biennia. While this revenue decrease affects all the funds supported by court cost revenues, the revenue decrease for Fund 5153 is shown below in **Figure 7**.

No state appropriations for interoperability have been made from Fund 5153. However, as shown in **Figure 7**, since fiscal year 2014, $38.0 million from this account has been appropriated to DPS and the Texas Military Department for border security and $16.4 million has been appropriated to DPS for crime reporting grants. The $2.5 million in state funding appropriated for interoperability since the 2014–15 biennium was from the General Revenue Fund ($2.0 million) and State Highway Fund 06 ($0.5 million).

In 2011, Texas' 24 Councils of Government estimated a total cost of $1.42 billion to attain Level 5 interoperability across the state. There currently is no method in place to account for local funds raised and expended for interoperability-related purposes. Because the locally funded component of total expenditures for interoperability is not known, it is not possible to determine how much funding in total may be required to attain Level 5 interoperability, assuming the 2011 estimate remains valid.

CONTRACTING FOR RADIO INTEROPERABILITY SYSTEMS EQUIPMENT AND SERVICES

Currently, state and local law enforcement entities all contract individually for equipment and services related to radio interoperability. When possible, DPS uses the Department of Information Resource's (DIR) Cooperative Contracts Services to procure DPS' equipment and services related to radio interoperability. However, due to statutory limitations established by the Eighty-fourth Legislature on cooperative contracts, leases, radio towers, and contracts valued at over $1.0 million can no longer be procured through DIR.

As of January 27, 2017, 28 contracts for interoperability-related services and equipment were available through DIR, and DPS has used 10 contracts, spending a total of $11.6 million. The cost breakdown over the last four fiscal years has been as follows: $846,000 in fiscal year 2013, $1.7 million in fiscal year 2014, $6.1 million in fiscal year 2015, and $3.0 million in fiscal year 2016. These agreements were with 10 individual vendors for a broad range of both radio interoperability related services and equipment from 122 available brands. DPS reports that given the age of the agency's communications equipment, the majority of the costs related to radio interoperability are now for operations and maintenance, which are not available through DIR contracts.

FIGURE 7
GENERAL REVENUE–DEDICATED ACCOUNT 5153, EMERGENCY RADIO INFRASTRUCTURE, FISCAL YEARS 2012 TO 2017

FISCAL YEAR	REVENUE	DPS EXPENDITURES	TMD EXPENDITURES	TOTAL EXPENDITURES	ENDING BALANCE
2012	$15,854,485	$-	$-	$-	$15,854,485
2013	$10,335,183	-	-	-	$26,189,668
2014	$9,981,930	-	$424,658	$424,658	$35,746,940
2015	$9,428,920	$5,500,000	$32,067,201	$37,567,201	$7,608,659
2016	$9,236,796	$8,189,174	-	$8,189,174	$8,656,281
2017, est.	$9,100,000	$8,189,174	-	$8,189,174	$9,567,107

SOURCES: Legislative Budget Board; Comptroller of Public Accounts.

At the local level, Councils of Government and individual entities are responsible for contracting for radio interoperability equipment and services. Some entities have used existing DIR contracts to negotiate more favorable terms for their own contracts. The only requirement imposed by DPS regarding the types of systems and/or vendors individual entities must use is that the equipment and services meet the P-25 standard. This lack of specificity, combined with a large variance in population size, geographic location, and cost constraints throughout the state, results in a wide range in equipment used by local entities. As such, having similarly located entities collectively contract for services would not necessarily guarantee a cost savings as it is possible that one (or more) of the entities would have to upgrade their current system before being able to use the same services. However, having entities that use similar equipment and services and/or the same vendor to contract collectively for such equipment and services could provide a cost containment or savings to local entities. In addition, larger groupings of local entities using the same technology and/or the same vendor may help facilitate the state's establishment of a "System of Systems" by reducing the number of different technologies accessing the "System of Systems." Further, having an increasing number of localities collectively contract for equipment and services could eventually make feasible the possibility of a single statewide contract for radio interoperability related services.

Similar to the lack of tracking of local funding for and expenditures made on radio interoperability related services and equipment, there is currently no means to track contracts entered into by local entities for purposes of procuring radio interoperability related services and equipment. This lack of information regarding local entities' and state agencies' interoperability needs, funding sources, contract information, and expenditures hinders the state's ability to determine whether localities are negotiating optimal contracts. Without this information, it is not possible to determine whether there is significant value to any state effort to leverage the state's buying power to negotiate additional contracts for interoperability services or equipment. This same lack of information also potentially limits opportunities for local agencies to enter into collective contracts for radio interoperability-related services and equipment.