

# Survey of Wireless Communication Device Use in College Station, Texas

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## **SURVEY OF WIRELESS COMMUNICATION DEVICE USE IN COLLEGE STATION, TEXAS**

### **BACKGROUND**

An observational survey of wireless communication device (WCD) use was conducted by staff of the Center for Transportation Safety, Texas A&M Transportation Institute, after passage of a College Station city ordinance banning the use of hand held WCD's while driving a vehicle or bicycle. The objective of the survey was to measure differences in actual observed WCD device use while operating a vehicle in the city of College Station from before the ordinance effective date to after. The ordinance was passed on August 11, 2016 and became effective on November 9, 2016. The pre-ordinance surveys were completed in early September 2016 and the post ordinance surveys in late November and early December 2016.

### **THE ORDINANCE**

The ordinance states that use of a WCD (such as a mobile phone, tablet, GPS device, etc.) while driving a motor vehicle or bicycle is a violation of the city's traffic code. There are exceptions for hands-free devices such as use of a speakerphone, or Bluetooth device, or any other piece of equipment that the operator can access without using either of their hands. Other exceptions include: using a hand-held device while at a complete stop, using a navigation device that is affixed to the vehicle, and those using the device for emergency services such as reporting a crime, traffic incident or medical emergency. This ordinance does not apply to operators licensed by the Federal Communication Commission to operate a radio frequency device, and authorized emergency personnel acting in an official capacity. In terms of enforcement of the ordinance, a police officer's visual observation of a vehicle operator holding a WCD creates a presumption that that person did violate the ordinance. (Full text of the ordinance is provided as Appendix A.)

### **ENFORCEMENT**

The city of College Station and the College Station Police Department began publicizing the ordinance immediately upon its passage. The Eagle, a local community newspaper, published an article on the new ordinance on August 12<sup>th</sup>, the day after it was passed (Clark, 2016). Reporters talked to the College Station Police Department (CSPD) to get clarification on the ordinance and how it would be enforced. The CSPD informed the public that once the ordinance became effective on November 9<sup>th</sup>, 2016, warnings would initially be given. The objective, according to CSPD, was voluntary compliance but their spokesperson also emphasized that having a consequence attached to the use of these devices might make people recognize the dangers of using these devices while driving. The initial grace period for issuance of warning citations was left open and CSPD said that no public announcement would be made when this period would be ending (Kamenicky, 2016). Local news station KBTX also covered the new ordinance extensively, including interviews with CSPD, community groups that supported the ordinance, and local residents. The city of College Station also used social media to

disseminate information via Twitter and Facebook starting the day the ordinance was passed. The 12<sup>th</sup> Man Foundation (2016) also sent out information and retweeted information from the city of College Station (2016) on Twitter to inform people of the new ordinance who would be coming to College Station for home football games at Kyle Field on the Texas A&M University campus.

As of November 16<sup>th</sup>, one week after the ordinance took effect, 29 warnings had been issued by CSPD (Falls, 2016). Police Chief Scott McCollum said he had already seen a decrease in distracted driving one week in and continued to emphasize their goal of voluntary compliance by the driving public. In an Eagle article on January 1<sup>st</sup>, 2017 the City of College Station said they had seen a great deal of “self-policing” with people changing their behavior to conform to the new ordinance (Fiedler, 2017). As of January 1<sup>st</sup> the number of warnings given was 140. Of these 140 warnings, 65% of the drivers were not from College Station or neighboring Bryan. While it is unclear exactly when CSPD started issuing citations, on March 8<sup>th</sup>, 2017 the City of College Station sent out a message via Twitter saying that 241 warnings and 66 citations had been issued under the ordinance (2017).

## **SURVEY DESIGN**

The TTI survey was a curbside traffic observation survey, which included observation of talking, manipulating (texting or touching), reading and holding any type of WCD. Observations were conducted in College Station and the neighboring city of Bryan, which does not have a WCD use ordinance, for use as a comparison city. For site selection each city was mapped into 12 section grids, and a survey location was selected at relatively high volume intersections in each of the 12 sections. Each site had two observation points – one for stopped traffic at the intersection and one for moving traffic approaching or after departure from the intersection, because the ordinance specifically excludes vehicles that are at a complete stop. Additionally, because of the exclusion for WCD’s affixed to the vehicle, surveyors also noted the presence of a device affixed to the vehicle and use of the affixed device by the driver. This allowed TTI to measure differences in behavior between stopped and moving vehicle operators and changes in the number of affixed devices from pre to post-ordinance. The sample size was 200 passenger vehicles covered by the ordinance per site, 100 moving and 100 stopped.

Motorcycle and bicycle WCD uses were also recorded; however, TTI conducted a separate survey of bicycle wireless communication device use targeted at heavily traveled bike routes with bike lanes.

The data collection protocol is provided as Appendix B. Observations of driver demographics (estimated age and gender) and vehicle characteristics (passenger vehicle or motorcycle) were noted for those engaged in WCD use as well as the type of device use (talking or texting). Drivers estimated to be 18 years or older were included in the survey, as subjectively estimated by observers following a protocol and trained to estimate age. Drivers under the age of 18 are governed by Graduated Driver Licensing (GDL) laws that restrict them from using any wireless communication device (including hands-free) until they reach the age

of 18. The age categories represent three driver groups of young adults (those under the age of 25), adults, and seniors (those 65 and over). Vehicles in which no device use was observed were counted using hand-held traffic counters. No demographic data (gender or age category) was recorded for non-users.

### **PRE-ORDINANCE WCD USE**

Of the 2400 passenger vehicles observed in the city of College Station, 280 drivers **(11.7%)** were engaged in WCD use while driving. Specifically, 7.1% were talking on a cell phone, 4.4% were texting, and .2% (or 5 drivers) were doing both. Note that these percentages strictly reflect observations of drivers in the act of using a WCD. The ordinance includes 'holding' a WCD as a citable offense. When drivers 'holding' a WCD were added to the analysis, the number of 'users' rose to 350, or 14.6% of all drivers observed.

Use rates differed for stopped vehicle drivers and moving vehicle drivers. In the 1201 moving vehicles, 100 drivers, or 8.3% of the total were observed using a WCD. An additional 180 drivers, or 15.0% using WCDs were at a complete stop at an intersection.

Observers also noted during the pre-ordinance phase that 54 vehicles had a WCD affixed to the vehicle (i.e., on the dashboard, door frame, etc.). Only one of the 54 was in use by the driver.

### **POST-ORDINANCE WCD USE**

Several weeks after the change to the College Station traffic code, a replicate survey was conducted. In the post-ordinance survey, of the 2400 passenger vehicles observed, 162 drivers **(6.8%)** were engaged in WCD use while driving, a difference of 4.9 percentage points from pre-ordinance use, effectively a **41.9%** decrease in use. Post-ordinance cell phone use for talking was 1.7%, for texting was 5.0%, and none were engaged in both behaviors. Figure 1 shows WCD use by type in College Station pre- and post-ordinance enforcement. Figure 2 shows WCD use if "holding" a device is included in the count, which would be citable post-ordinance.

The percentage of WCD users observed in moving vehicles was half that observed in the before period, dropping from 8.3% to 4.1%. Stopped vehicle driver WCD use was 9.4% post-ordinance, a 37.3% decrease from 15.0% pre-ordinance (Figure 3).

The number of affixed devices in the post period rose to 76 in the 2400 vehicles observed. None, however, were being used when observed.

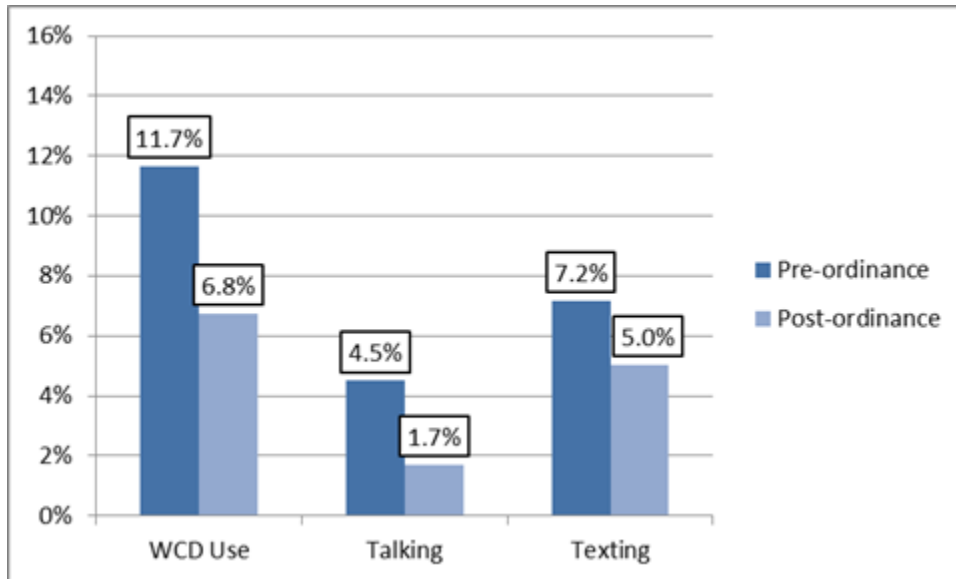


Figure 1. Pre- and Post-Ordinance College Station WCD Use

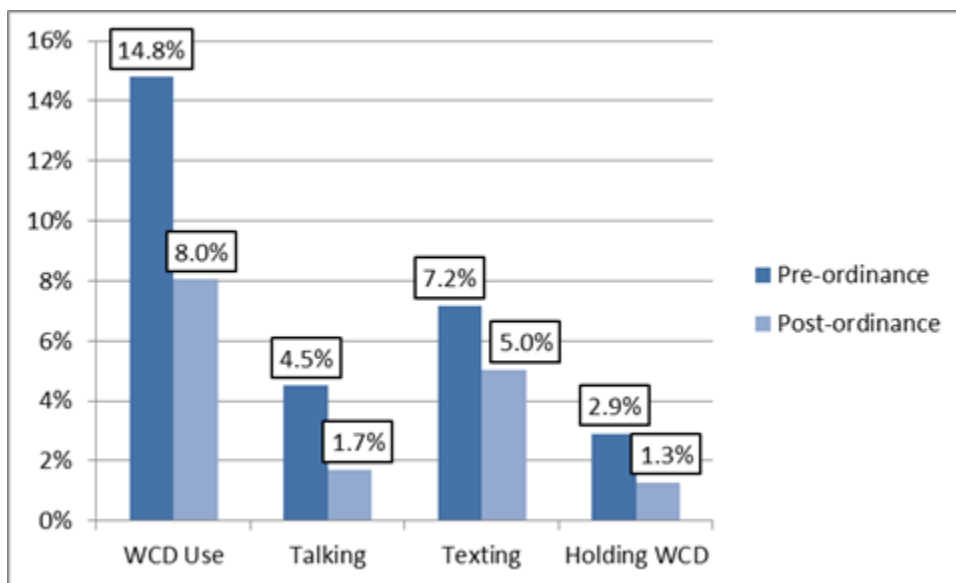
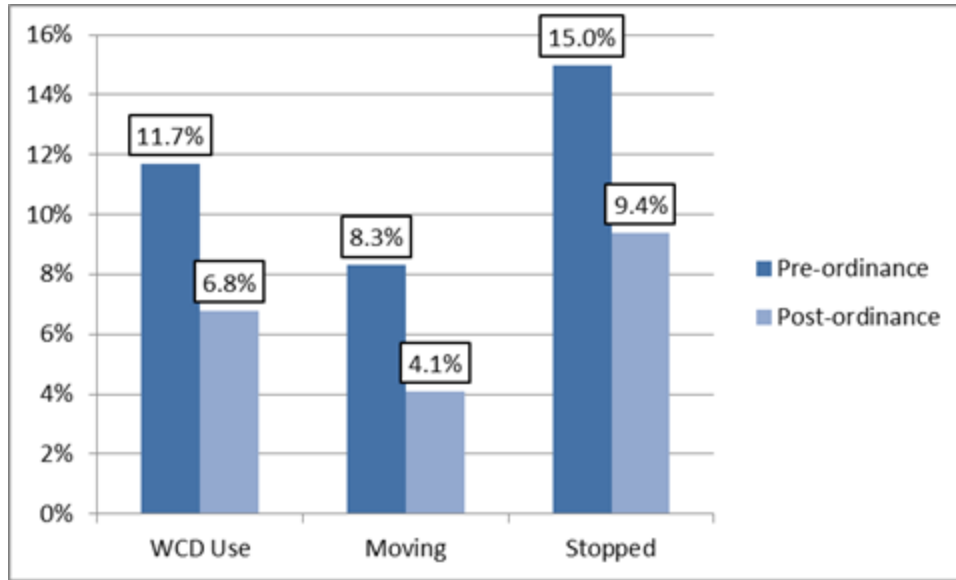


Figure 2. Pre- and Post-Ordinance College Station WCD Use Including Presumption of Use by Holding Device



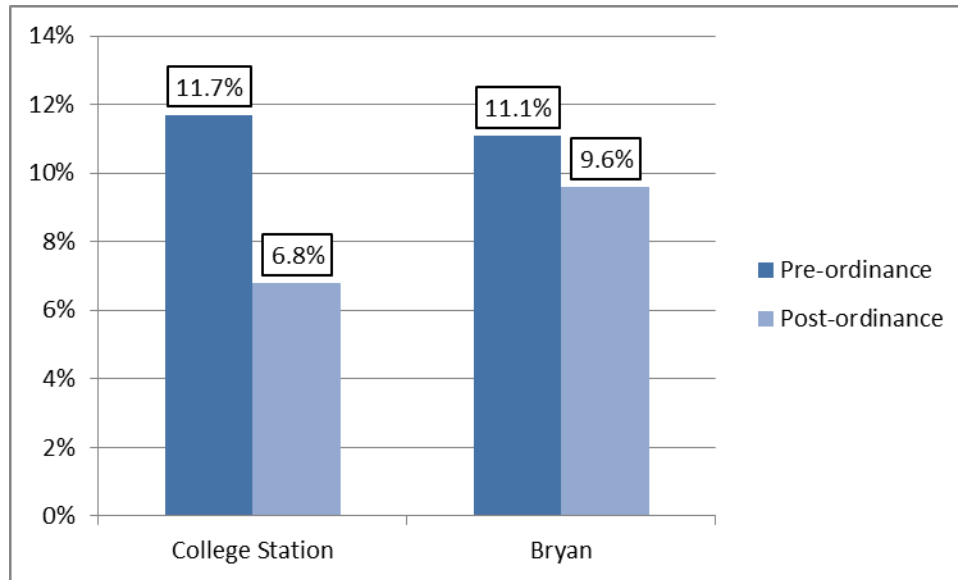
**Figure 3. Pre- and Post-Ordinance College Station WCD Use – Moving Versus Stopped Vehicle Drivers**

### COMPARISON CITY ANALYSIS

The city of Bryan, without a hands-free ordinance was used as a comparison city and surveyed during the same timeframe using the same survey design. Pre and post WCD use (moving and stopped combined) in Bryan compared to pre and post use in College Station is shown in Table 1 and Figure 4.

**Table 1. College Station/Bryan Comparison of WCD Use Pre and Post-Ordinance**

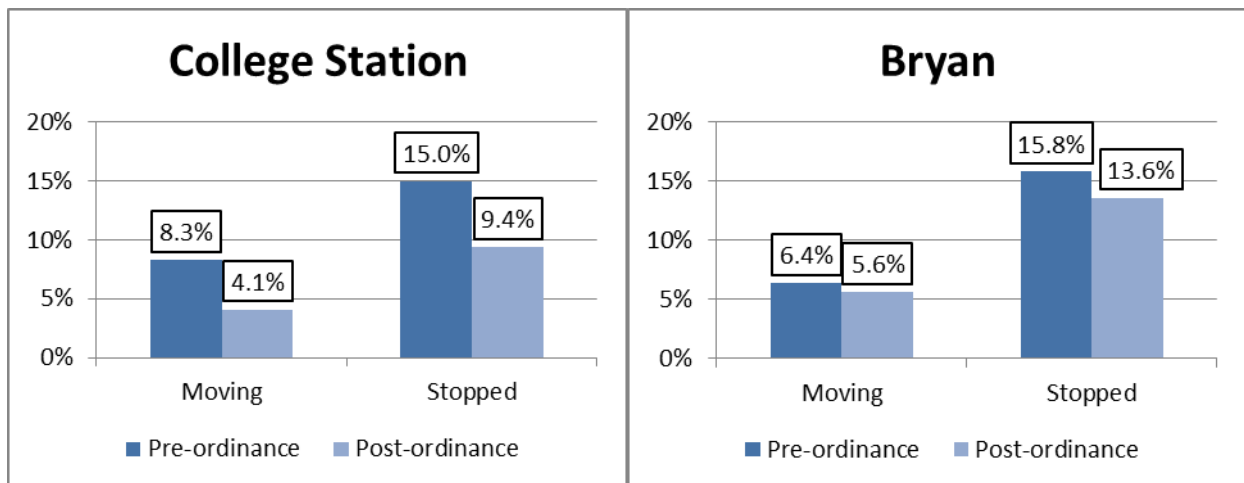
Usage by Type	College Station Total Vehicle N=2400				Bryan Total Vehicle N=2400			
	Pre		Post		Pre		Post	
	n	%	n	%	n	%	n	%
Talking	106	4.42%	41	1.71%	104	4.33%	76	3.17%
Texting	169	7.04%	121	5.04%	159	6.63%	151	6.29%
Both	5	0.21%	0	0.00%	4	0.17%	3	0.13%
<b>Total</b>	<b>280</b>	<b>11.67%</b>	<b>162</b>	<b>6.75%</b>	<b>267</b>	<b>11.13%</b>	<b>230</b>	<b>9.58%</b>



**Figure 4. Pre- and Post-Ordinance WCD Use – College Station and Bryan**

The decrease in WCD use in College Station is statistically significant ( $z=5.88, p<.001$ ); however, the decrease in WCD use in Bryan from 11.1% to 9.6% (a **13.5%** decrease) during the same time frame is not a statistically significant decrease.

The analysis of moving versus stopped vehicles revealed that both conditions were impacted by the ordinance to a greater degree in College Station than in Bryan. The difference in moving and stopped vehicle drivers' WCD use pre-ordinance was not statistically significant between the two cities (see Figures 5 and 6). However, after the ordinance went into effect, the percent of drivers in stopped vehicles using WCD's in Bryan was significantly different from College Station ( $z=-3.23, p<.01$ ). The site level data in Bryan showed that at four sites the WCD use rate actually increased. The moving rate increased at four sites and the stopped rate increased at three sites.



**Figures 5 & 6. Pre- and Post-Ordinance WCD Use – College Station and Bryan**

Observers also noted in Bryan during the pre-ordinance phase that 79 vehicles had a WCD affixed to the vehicle. Three of the 79 devices were in use by the driver. The number of affixed devices in the post period observed in Bryan was 82 in the 2400 vehicles observed, and none were being used when observed.

## **SUMMARY**

TTI surveys found a **41.9%** decrease in observed WCD use in College Station after implementation of the hands-free only cell phone ordinance. In the comparison city of Bryan, WCD use decreased by **14.3%** during the same timeframe. The largest percentage decreases were observed in moving vehicles in College Station. The decrease in percentage of WCD users talking was greater than the decrease for texting. The number of devices affixed to the vehicle increased in both College Station and Bryan from pre to post-ordinance with much larger increases in College Station, the city affected by the new ordinance.



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**APPENDIX A**

ORDINANCE NO. 2016-3797

AN ORDINANCE AMENDING CHAPTER 10, "TRAFFIC CODE" OF THE CODE OF ORDINANCES OF THE CITY OF COLLEGE STATION, TEXAS, BY ADDING SECTION 10-14 "USE OF WIRELESS COMMUNICATION DEVICES WHILE OPERATING A MOTOR VEHICLE OR BICYCLE", PROVIDING A SEVERABILITY CLAUSE; DECLARING A PENALTY; AND PROVIDING AN EFFECTIVE DATE.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF COLLEGE STATION, TEXAS:

PART 1: That Chapter 10, "Traffic Code", be amended by adding Section 10-14 "Use of Wireless Communication Devices While Operating a Motor Vehicle or Bicycle", as set out in Exhibit "A", attached hereto and made a part of this ordinance for all purposes.

PART 2: That if any provisions of any section of this ordinance shall be held to be void or unconstitutional, such holding shall in no way affect the validity of the remaining provisions or sections of this ordinance, which shall remain in full force and effect.

PART 3: That any person, firm, or corporation violating any of the provisions of this chapter shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punishable by a fine of not less than Twenty-five Dollars (\$25.00) nor more than Two Hundred Dollars (\$200.00). Each day such violation shall continue or be permitted to continue, shall be deemed a separate offense. Said Ordinance, being a penal ordinance, becomes effective ten (10) days after its date of passage by the City Council, as provided by Section 35 of the Charter of the City of College Station.

PASSED, ADOPTED and APPROVED this 11th day of August, 2016.

APPROVED:

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Secretary

APPROVED:

\_\_\_\_\_  
City Attorney

EXHIBIT "A"

That Chapter 10, "Traffic Code", is hereby amended by adding Section 10-14 "Use of Wireless Communication Devices While Operating a Motor Vehicle or Bicycle", and is to read as follows:

Section 10-14

Use of Wireless Communication Devices While Operating a Motor Vehicle or Bicycle

A. Definitions.

1. Authorized Emergency Personnel means a person who is a law enforcement officer, firefighter, member of a governmental emergency medical services, communications or public utility function, or member of a governmental emergency management function.
2. Hands-free Device means speakerphone capability or a telephone attachment or other piece of equipment, regardless of whether permanently installed in the motor vehicle allowing use of the Wireless Communication Device without use of either of the operator's hands.
3. Use means employing, accessing or operating the Wireless Communication Device for any reason.
4. Wireless Communication Device has the meaning assigned in Texas Transportation Code § 545.425, as amended.

B. Violation. An operator of a motor vehicle or a bicycle may not use a Wireless Communication Device while operating a motor vehicle or bicycle on a public roadway or highway.

C. Affirmative Defenses. It is an affirmative defense to prosecution to an offense under this section if:

1. Complete Stop. The motor vehicle or bicycle is at a complete stop.
2. Hands-free Device. The Wireless Communication Device is used in Hands-free Device mode of operation to engage in telephone communication or to listen to audio transmissions.

3. Navigation. The Wireless Communication Device is used as global positioning or navigation device or for its global positioning or navigation operating software and the Wireless Communication Device is affixed to the motor vehicle or bicycle.

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4. Emergency Services. The Wireless Communication Device is used for obtaining emergency assistance to report a crime, traffic accident, medical emergency, serious traffic hazard or in prevention of a crime.

D. Presumption. Evidence that a police officer observed a person holding a Wireless Communication Device while operating a motor vehicle or bicycle in motion creates a rebuttable presumption that the person used a Wireless Communication Device in violation of this section.

E. Conflicts. To the extent this section conflicts with any provision of the Texas Transportation Code regarding the use of wireless communication devices or hand-held mobile telephones, this section does not apply.

F. Non-Applicability. This section does not apply to:

a. A person licensed by the Federal Communication Commission while operating a radio frequency device other than a Wireless Communication Device.

b. Authorized Emergency Personnel while acting in official capacity.

## APPENDIX B

### Data Collection Protocol for College Station, Texas “Use of Wireless Communication Devices While Operating a Motor Vehicle or Bicycle” Survey

#### Background

The Texas A&M Transportation Institute (TTI) will conduct an observational survey of “Use of Wireless Communication Devices (WCD) While Operating a Motor Vehicle or Bicycle” in College Station and Bryan, Texas.

The survey elements will be included per the ordinance Chapter 10, “Traffic Code” of the code of ordinances of the city of College Station, Texas amended section 10-14 “Use of Wireless Communication Devices While Operating a Motor Vehicle or Bicycle”.

The survey is designed to provide a comparison of pre-ordinance WCD with WCD use following enactment of the city ordinance banning use effective November 9, 2016. Sites in Bryan are included in the survey design for a controlled comparison.

#### Definitions

That Chapter 10, “Traffic Code”, is hereby amended by adding Section 10-14 “Use of Wireless Communication Devices While Operating a Motor Vehicle or Bicycle”, and is to read as follows:

#### **Section 10-14**

#### **Use of Wireless Communication Devices While Operating a Motor Vehicle or Bicycle**

##### **A. Definitions.**

**1. Authorized Emergency Personnel** means a person who is a law enforcement officer, firefighter, member of a governmental emergency medical services, communications or public utility function, or member of a governmental emergency management function.

**2. Hands-free Device** means speakerphone capability or a telephone attachment or other piece of equipment, regardless of whether permanently installed in the motor vehicle allowing use of the Wireless Communication Device without use of either of the operator's hands.

**3. Use** means employing, accessing or operating the Wireless Communication Device for any reason.

**4. Wireless Communication Device** has the meaning assigned in Texas Transportation Code § 545.425, as amended.

**B. Violation.** An operator of a motor vehicle or a bicycle may not use a Wireless Communication Device while operating a motor vehicle or bicycle on a public roadway or highway.

**C. Affirmative Defenses.** It is an affirmative defense to prosecution to an offense under this section if:

1. **Complete Stop.** The motor vehicle or bicycle is at a complete stop.
2. **Hands-free Device.** The Wireless Communication Device is used in Hands-free Device mode of operation to engage in telephone communication or to listen to audio transmissions.
3. **Navigation.** The Wireless Communication Device is used as global positioning or navigation device or for its global positioning or navigation operating software and the Wireless Communication Device is affixed to the motor vehicle or bicycle.
4. **Emergency Services.** The Wireless Communication Device is used for obtaining emergency assistance to report a crime, traffic accident, medical emergency, serious traffic hazard or in prevention of a crime.

**D. Presumption.** Evidence that a police officer observed a person holding a Wireless Communication Device while operating a motor vehicle or bicycle in motion creates a rebuttable presumption that the person used a Wireless Communication Device in violation of this section.

**E. Conflicts.** To the extent this section conflicts with any provision of the Texas Transportation Code regarding the use of wireless communication devices or hand-held mobile telephones, this section does not apply.

**F. Non-Applicability.** This section does not apply to:

- a. A person licensed by the Federal Communication Commission while operating a radio frequency device other than a Wireless Communication Device.
- b. Authorized Emergency Personnel while acting in official capacity.

### **Data To Be Collected**

“Use of Wireless Communication Devices While Operating a Motor Vehicle or Bicycle” will be recorded for drivers only.

All motor vehicles will be included, with the exception outlined in Chapter 10 “Traffic Code” Section 10-14. Include all passenger vehicles **except** emergency response vehicles (governmental and nongovernmental), military vehicles, vehicles operated by a person under 18 years of age, and vehicles with a gross vehicle weight rating (GVWR) of 26,001 pounds. Examples of emergency response vehicles include but not limited to law enforcement, fire response public or private volunteer, medical service or ambulances, municipal department or utility, tow trucks, and vehicles with emergency response lights, flashers, or placards.

Survey data will include:

1. Driver’s estimated age (young adults 18-24, adult 25-64, senior 65+)
2. Driver’s gender (male or female)
3. Vehicle type (limited to passenger vehicle, motorcycle, and bicycle)
4. Wireless Device Use (talking, texting, or holding)

- a. Talking- Driver observed holding WD to their ear or speaking into WCD
- b. Texting- Driver observed looking at, reading, typing, or scrolling WCD
- c. Holding- Driver observed holding a WD, but not observed talking or texting

Collect data for 100 vehicles, plus all motorcycles, and bicycles observed at each site.

This survey requires two surveyors per site. One surveyor will be at an intersection observing and collecting data for stopped vehicles only. A maximum of ten (10) vehicles will be collected per light cycle. The second surveyor will be either upstream or downstream of the surveyor collecting stopped traffic data. The second surveyor will be observing and documenting moving traffic only, **no** stopped vehicles will be documented.

### **Instructions for Recording Written Data**

Complete site information at the top of the data sheet.

**Observer**- Name of observer and scribe if needed

**Date** - include month, day and year

**Site** - include site number and intersection streets or mid-block street

**City** - city of observation

**Dir. Of Obs.** - direction of traffic observed (north, south, east, west)

**Loc. Type** - the type of location observed (intersection with light or sign, or mid-block)

**Weather** - type of weather during observation period

**Notes** – any unique site characteristics, lane of traffic observed if not closest lane

**Start Time** – Time when observation begins

**End Time** – Time when observation finishes

Use the traffic counter to count vehicles in your lane of observation **not** engaged with a wireless communication device. Use four buttons on the counter: button one for vehicles, button two for motorcycles, button three for bicycles, and button four for not sure's.

Documenting drivers engaged with a wireless communication device (WCD):

DRIVER columns: Document **M** for male, **F** for female, or **?** for unsure for the driver's gender in the appropriate column for estimated age of driver (young adults 18-24, adult 25-64, senior 65+).

Vehicle Type column: Document C for car/passenger vehicle, M for motorcycle, or B for bicycle. Default in this column will be C.

WIRELESS DEVICE USE columns: Place a check in the appropriate column for type of WCD use.

- a. Talking- Driver observed holding WD to their ear or speaking into WCD
- b. Texting- Driver observed looking at, reading, typing, or scrolling WCD
- c. Holding- Driver observed holding a WD, but not observed talking or texting

Enter the number of passenger vehicles, motorcycles, and bicycles observed from counter in the appropriate box.

The total number of passenger vehicles (counter and documented) observed should equal 100 (the sample size). Motorcycles and bicycles are not included in sample size.

### **Observation Procedure**

Observers must follow a schedule that indicates the day, start time, intersection or mid-block street name, site number, and direction of travel for observations.

Survey every vehicle in the nearest thru lane to the curb where you are standing, or observe a constant ratio of vehicles in the curb lane if volume is too heavy to observe every vehicle. If you do not see the driver clearly enough to determine WCD use, count the vehicle with the corresponding counter button. Focus on the hands and mouth of the driver. If you **do not** see an act of WCD usage, the observation is a vehicle with non-use. If you **cannot** see the driver, the vehicle should be counted with the Not Sure button. Document each driver WCD use observed on the data collect sheet as described in the Instructions for Recording Written Data section.

If, for any reason, you are unable to comply with the schedule or you have any questions, you should notify the project director (Katie Womack) at TTI immediately.