1. PURPOSE

To establish criteria for the maintenance and use of all Houston Public Works vehicles and equipment that are equipped with Electronic Tracking Technology, to inform employees as to what constitutes a violation under this procedure and to provide guidance to department managers, supervisors and employees about the use of such technology in vehicles that Houston Public Works owns or leases.

2. OBJECTIVE

To use Electronic Tracking Technology across Houston Public Works entire fleet as a tool to promote employee safety, encourage proper use of vehicles and reduce operating expense.

3. DEFINITIONS

Term	Definition
Deputy Director	The Deputy Director of the Service Line to whom the employee is assigned.
Electronic Tracking Technology	A technological method or system used to see, monitor, or collect information, including GPS, wireless technology, event data recorders (EDR), and sensing and diagnostic modules (SDM).
Excessive Idling	Idling of a vehicle for 30 minutes or more.
Excessive Speeding	Exceeding the posted speed limit by 20 miles per hour.
Global Positioning System (GPS)	A global navigation satellite system that provides geolocation and time information to a GPS receiver.
Idling	A process when the Vehicle's engine is running but the Vehicle itself is not moving.
Networkfleet	The system that hosts the Vehicle data captured by the electronic tracking devices.
Speeding	Exceeding the posted speed limit by 10 miles per hour.
Vehicle	Any City owned (or leased) internal combustion vehicle including cars, vans, buses, trucks, or SUVs utilizing either gasoline, diesel, propane, Compressed Natural Gas (CNG) or other hydrocarbon-based fuel as a source of energy and designed and approved to be driven on public roads, highways or toll roads.
Violation	The failure to follow this procedure in terms of proper use of City vehicles, idling, speeding and others. The following are considered violations under this

APPROVED: Carol Haddock	DATE APPROVED: 3/27/19

	procedure: a. Speeding for more than 3 continuous minutes b. Excessive Idling c. Driving a Vehicle outside of the jurisdiction of the City of Houston d. Using the Vehicle to conduct personal errands e. Failure to follow assigned routes f. Tampering, attempting to remove or disable the Electronic Tracking Technology g. Operating the Vehicle in an unsafe mode h. Operating the Vehicle in a manner that would cause damage to the Vehicle such as rapid acceleration, hard stops, manually downshifting to a gear that is incorrect for the current speed, operating the vehicle when indicators warn that service is required to avoid damage to the Vehicle i. Failing to report Vehicle damage or Vehicle mechanical failure in a timely manner

4. SCOPE

This procedure applies to all Houston Public Works employees and supersedes any other former Departmental procedure or directive.

5. RESPONSIBILITIES

Roles	Responsibilities
Employees	• Inspect their assigned or pool vehicle before each business trip and immediately report any damage or mechanical failure, including damage to the tracking device, to the supervisor. • Sign an Acknowledgement Form (see Attachment A) that verifies the receipt and understanding of this procedure.
Supervisors and Managers	• Ensure that the requirements of this procedure are understood by his/her direct reports and if a violation occurs, they need to act in accordance to this procedure. • Understand driving patterns, speeding violations and trends (see Attachment B, "Speed Data," and C, "Posted Speed Limit"). More training resources and videos are available on Networkfleet.com/User account. • Will be given access to the Networkfleet system to create reports, conduct use, speed, or idling investigations, perform utilization analysis or other functions as directed to promote employee safety, encourage proper use of vehicles, and reduce operating expenses.
Supervisors, Managers, or Designees	Should report or request a service repair of a malfunction or damage GPS device to Public Works Fleet help-desk team.

6. PROCEDURE

6.1 Electronic Tracking Technology allows Houston Public Works to enhance job performance, personnel safety, situational awareness, and may provide assistance in time of emergency events. It also may be used for other business-related purposes, including, but not limited to, measuring productivity, finding stolen vehicles, asset inventorying, providing aid to vehicles that

break down, increasing employee safety, managing agency resources effectively, ensuring that employees are following their routes or assignments, monitoring functions related to the potential need to repair or service, capturing safety related data for retrieval after collision or similar incidents.

6.2 Information gathered by Electronic Tracking Technology is considered public information under the Texas Public Information Act. In response to open record requests, the City is required to produce information gathered by Electronic Tracking Technology.

6.3 This procedure covers five categories that includes speeding, idling, tampering, unauthorized use and maintenance. The data will be provided supervisory personnel and fleet managers to keep them informed of vehicle trouble codes, mileage, vehicle location, vehicle idling time, speeding, routing, service intervals, hard braking, rapid acceleration, etc. This information is transmitted and updated every 60-120 seconds.

6.4 Employees are to operate Vehicles in a safe and responsible manner. Employees incurring any Violation may be subject to corrective action as stipulated in the Corrective Action Matrix below.

6.5 Employees must follow all state and local traffic laws including posted speed limits. Electronic Tracking Technology installed in the Vehicles are enabled to identify when vehicles exceed the posted speed limit, how far above the speed limit the vehicle was traveling, the time and duration of time the vehicle was speeding and the location of the Violation. These devices also track and record the location of the vehicle, track and report when the vehicle Idles for more than 5 minutes and transmit back to the City the highest speed of each vehicle during any given one-minute reporting interval.

6.6 Corrective Action Matrix:
Below is a Corrective Action Matrix for administration of recommended corrective actions to employees found to have incurred any of the Violations described in this Procedure. These recommendations may be elevated if the employee had previous violations or, if at the sole discretion of the Deputy Director, the Violation created significant danger to the public or employees (e.g. Excessive Speeding). Violations resulting in a Level I (or greater) corrective action will also require the completion of a Defensive Driving Course (DDC), if the employee has not completed DDC within the past 6 months

No. of Violations/12 month Rolling Average	**Recommended Discipline**
1	Verbal Coaching
2	PID
3	Level I
4	Level II
5	DML

The guidelines in this matrix assume:
a. No extenuating or aggravating circumstances. For example, Excessive Speeding or Speeding while operating a vehicle which requires a Commercial Driver's License to operate could be considered aggravating circumstances that could result in a more serious corrective action.

b. No active corrective action for any other infractions.
c. Example:

An employee receives a Level I for a violation following a PID. If an additional violation occurs within the following 12 months after receiving a Level I, the employee will be issued a Level II, in accordance with AP 3-7. (Assumes all violations mentioned are for driving over the 10 mph and that subsequent corrective actions are based on violations that occurred after the prior corrective action was administered.)

6.7 No Houston Public Works employee should allow a motor vehicle or other engine under his or her control to Idle for more than thirty consecutive minutes when the motor vehicle is not in motion or when the other engine is not being used for its primary function. Networkfleet records Idle time when the vehicle is running, but the speedometer reads zero. Weekly Idling reports are submitted to the Executive Leadership team. Excessive Idling of Vehicles by employees will be reported to their supervisor and the employee is required to provide the reason for such Idling. If the Excessive Idling was not work related, employee may be subject to the City of Houston's Positive Corrective Action Policy. Violations for Excessive Idling will be addressed under the Vehicle/Equipment Idling Policy 6-1, PUBLIC WORKS 1-24 and AP 2-2. Exceptions to Excessive Idling violations will be made for those vehicles in which Idling is needed for normal operation of the mounted equipment.

6.8 City Vehicles are to be used for conducting city business only within the jurisdiction of the City of Houston. Leaving the jurisdiction of the City of Houston without permission is prohibited. Use of a City vehicle for personal errands is strictly prohibited per Administrative Policy 2-2. The GPS tracking devices will calculate specific vehicle location. Employees found to be outside their assigned work area or at locations conducting personal errands will be subject to corrective action as defined in Public Works A1-24.

6.9 Employees are prohibited from tampering, attempting to remove, or disable the Electronic Tracking in City owned or leased vehicles.

6.10 The Electronic Tracking Technology provides servicing requirements with vehicle trouble codes. The assigned employee of each vehicle is responsible for taking the vehicle to the shop for service when trouble codes or required service notifications are displayed.

6.11 Adherence to this procedure is mandatory. Any employee who is found to have neglected or misused a City vehicle or violates this procedure in any way will be subject to disciplinary action up to and including termination.

7.0 AUTHORITY

7.1 Vehicle/Equipment Idling Policy 6-1
7.2 Houston Public Works 1-24; Positive Corrective Action Program
7.3 AP 2-2; Motor Vehicle Assignment and Use
7.4 AP 3-7

8.0 APPENDIX

8.1 Appendix A – Acknowledgment
8.2 Appendix B – Speed Data
8.3 Appendix C – Posted Speed Limit

APPENDICES

EMPLOYEE ACKNOWLEDGMENT FORM

By signing below, I acknowledge that I have read and understood Houston Public Works Electronic Tracking Technology Policy (AP 6-3) that provides for Houston Public Works to monitor and gather data from City owned or leased vehicles via Electronic Tracking Technology.

I further acknowledge and understand that as a driver or passenger of a City owned or leased vehicle:

- I don't have an expectation of privacy regarding information collected from such monitoring; and
- if such information shows I've failed to comply with the provisions of AP 6-3, that it may be used to support diciplinary action against me; and
- that altering or attempting to alter or disable Vehicle Electronic Tracking Technology will also result in disciplinary action up to and including indefinite suspension or termination.

_____	_____
Employee Signature	Employee Name (Printed)
_____	_____
Date	Employee ID Number

APPENDIX B

Technical Information Bulletin

Networkfleet Technical Information Bulletin

SPEED DATA

One of Networkfleet's most popular features is vehicle speed data. Speed data can be used to enforce safe driving policies, benefiting both employees and customers. Multiple "speeding" violations can help fleet managers identify unsafe driving patterns. In addition, drivers who know that their speed will be monitored may become more cognizant of their driving behavior. More detail on how speed data is calculated and displayed in the Networkfleet application can be found below.

How is speed *calculated*?

Speed calculations differ for each of Networkfleet units in the 3500, 4200 and 5000 product lines.

- For L3500, H3500 and 5500 Units – The L3500, H3500 and 5500 units are very accurate and report speed values directly provided by the vehicle's engine computer. You may notice a slight discrepancy between Networkfleet speed value and your vehicle's speedometer as the speed reported by speedometer is only accurate within approximately 2% -3% (when the car is new) of the engine computer's value. In most instances, the Networkfleet speed and the vehicle's speedometer are approximately the same value.
- For U3500, 4200 and 5200 Units – Because U3500, 4200 and 5200 units are not connected to the vehicle's engine computer, the GPS processor on the Networkfleet device calculates speed by using data from GPS satellites. The GPS processor on the Networkfleet device analyzes the straight-line distance traversed by the vehicle between two geographic points and divides this by the time traveled to get the mph of the vehicle. This speed value is fairly close to the value reported from the vehicle's engine computer. However, there are some situations that will reduce the accuracy of this calculation. These instances include: strong curvature on a road, driving into "urban canyons" or topographic canyons, very poor atmospheric conditions such as heavy snow or some types of dense fog, and satellite "down time" due to service or software changes.

How speed is *displayed*?

The Networkfleet website displays three different speeds that a vehicle is driven: *maximum, current,* and average. These speeds are displayed throughout the website on one or more pages (i.e. the Vehicle Dashboard and the Overview Map).

The *maximum* speed is the highest speed a vehicle drove during any given two minute interval. For example, if a vehicle was going between 55 mph and 60 mph between 3:10pm and 3:12pm, the Networkfleet website would display a maximum vehicle speed of 60 mph for that particular time period.

The *current* speed is the speed a vehicle was traveling at the time the message was sent. For example, if a vehicle was going 45 mph at 3:12pm when a message is sent, the Networkfleet website would display a current vehicle speed of 45 mph for that particular time.

APPENDIX C

verizon

Networkfleet

Posted Speed Limit

Description

"Posted Speed" is a term used to represent the posted, legal speed limit as indicated on speed limit signs on roads throughout the United States.

How to Use Posted Speed Limits

Understanding driving patterns and actual speeding violations will have an immediate impact on fuel usage, driver behavior, and safety. As further described below, the data can sometimes be inconsistent; therefore we do not recommend disciplining drivers for single infractions. However, patterns and trends will emerge and we recommend studying the information for trends then using the information to train drivers.

APPENDIX C CONTINUE

Posted Speed Data

Posted speed data has been gathered by Networkfleet's mapping partners over the past several years. Most freeways, highways, and major arterial roads are mapped for posted speed. This means that most 45 MPH and above roads are mapped and speed violations can be reported. Depending on location, some lower level roads with speed limits of 25-45 MPH are also mapped for posted speed. Networkfleet and our mapping partners will continue to add more posted speed data.

Because of the vast number of road segments in the United States, the complexity of mapping them, and the fact that many speed limits change over time, the actual posted speeds that appear in the reporting will not always be accurate for every road segment. We expect that in most areas, over 90% of posted speeds listed in our reports and alerts are correct for that road segment.

In addition to occasional posted speed anomalies, there are cases that may appear inconsistent due to the nature of GPS data. Some examples to look for when you are using the Posted Speed Report include:

1. **Intersections –** When a speed reading is taken at an intersection, or when one street crosses over or under another, it can be difficult to accurately plot which street the vehicle is actually driving on. There are occasions when we will show the vehicle on one street when it is actually traveling through the intersection on another. When these two streets have different posted speed limits, the road may show a violation when one did not actually occur.

2. **Frontage Roads –** Many highways and freeways have frontage roads. Sometimes, especially when it is cloudy or if there is abundant foliage it can interfere with the GPS signal. For example, a vehicle traveling on the freeway may be shown as traveling on the frontage road. In these situations, a posted speed violation may also be shown when one did not occur.

Note: Recommended speeds are not utilized by the Posted Speed functionality. Recommended speeds are identified as yellow road signs such as off ramps, school zones, and curves.

Summary

Posted speed limit reporting offers tremendous additional insight for fleets and their drivers' behavior. Monitoring fleet speed on all road segments can have a dramatic positive effect across the organization. Once drivers know posted speed limit reporting is in place, the number of violations is expected to drop dramatically. **Please contact your Networkfleet representative for additional training and information on using this valuable feature.**

Note: If a user identifies an incorrect posted speed value, please report to Verizon Customer Care at 866.227.7323.

The *average* speed is the average speed that the vehicle traveled during any given two minute interval (several speed readings are taken during the two minute interval and the average of all of those readings is calculated). For example, if a vehicle was going at 50 mph from 3:10pm to 3:11pm and at 60 mph between 3:11pm and 3:12pm, the Networkfleet website would display an average vehicle speed of 55 mph for the two minute interval.

To learn more about Networkfleet, please contact Customer Care at 866.227.7323 or email support@networkfleet.com

**The information contained in this TIB is considered confidential and protected as such under contractual agreements between Networkfleet and its customers and Sales Partner network.*