Police Vehicle Evalution

Model Year 2014

MICHIGAN STATE POLICE

NLECTC
National Law Enforcement and Corrections Technology Center

STATE OF MICHIGAN

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and

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2014 Model Year

Police Vehicle Evaluation Program

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TABLE OF CONTENTS

PREFACE

The Michigan State Police Vehicle Test Team is pleased to announce the results of the 2014 Model Year Police Vehicle Evaluation. This year we tested fifteen vehicles and seven motorcycles. We appreciate your continued support and encouragement. The vehicles evaluated this year included the following:

POLICE CATEGORY

Chevrolet Caprice 3.6L
Chevrolet Caprice 6.0L
Chevrolet Impala 3.6L
Chevrolet Tahoe 5.3L
2014.5 Dodge Charger 3.07 3.6L
Dodge Charger 2.65 5.7L
Dodge Charger 3.07 3.6L
2014.5 Dodge Charger 2.65 5.7L
2014.5 Dodge Charger AWD 3.06 5.7L
Ford PI Sedan FWD 3.5L
Ford PI Sedan AWD 3.06 3.7L
Ford PI Sedan AWD Ecoboost 3.5L
Ford PI Utility AWD 3.7L
2014.5 Ford PI AWD Ecoboost 3.5L
2014.5 Ford PI Utility AWD Ecoboost 3.5L

MOTORCYCLES

BMW R1200RTP
BMW F800GTP
Harley Davidson FLHP (Roadking)
Harley Davidson FLHTP (Electraglide)
Moto Guzzi California 1400 Touring ABS
Moto Guzzi Norge 1200 ABS
Victory Commander

GENERAL INFORMATION

All of the cars were tested with a clean roof (no overhead light or light bar) and without "A" pillar mount spotlights. We believe this is the best way to ensure all of the vehicles are tested on an equal basis. Remember that once overhead lights, spotlights, radio antennas, sirens, and other emergency equipment are installed, overall performance may be somewhat lower than we report.

Each vehicle was tested with the tires that are available as original equipment on the production model. Specific tire information for each vehicle is available in the Vehicle Description portion of this report. All vehicles listed in this report were equipped with electronic speed limiters.

Motorcycles were tested with equipment installed as provided by their respective manufacturer. Harley-Davidson, Victory, and Moto Guzzi chose to test their bikes with minimal equipment. BMW chose to test their bikes with the majority of the equipment installed.

Chrysler Proving Grounds - Acceleration, Top Speed, & Braking Tests

We had a full line up of test vehicles. We would like to thank Ms. Heather Gulley for the assistance we received from the staff at the Chrysler Proving Grounds.

During the acceleration runs, the Victory Commander I police motorcycle experienced a high speed "wobble" on run four. The rider of the motorcycle had to ease off the throttle to make the wobble subside. It is still unclear what caused the high speed wobble. There was no wobble or weave noted or detected during the motorcycle dynamics portion at Grattan Raceway.

Grattan Raceway - Motorcycle Dynamics

Motorcycle Dynamics testing this year was again performed at Grattan Raceway. This 2 mile road course provides a realistic environment to test motorcycles in dynamics and continues to produce comprehensive results.

The Moto Guzzi California 1400 developed an issue due to lean angle contact with the rear brake pedal mount (right side). This caused the rear brake to stick. Moto Guzzi engineers adjusted the mount and the motorcycle continued the dynamics test without incident.

The Moto Guzzi Norge had a lean angle issue with the center stand. The center stand spring mount ground off allowing the center stand to release and drag. The center stand was secured in the up position to continue the dynamics test without further incident.

Grattan Raceway - Vehicle Dynamics (High Speed Handling) Test

During the Vehicle Dynamics Testing at Grattan Raceway, a test driver noticed a severe shimmy on the front of the Ford All Wheel Drive 3.5L while completing the cool down lap. The Ford mechanics and Vehicle Travel Services mechanics inspected the car and found that the Left Front lug nuts were loose. The Ford mechanics replaced the wheel, hub and bearing assembly, and lug nuts. The wheel nuts were torqued to specifications and the vehicle completed the Dynamics testing without further incident.

We appreciate the support we received from General Motors, Ford, Chrysler, Harley-Davidson, BMW, Victory, and Moto Guzzi during testing. This also was the seventh year of motorcycle testing and we continue to get great feedback on this important component to the testing lineup.

We recommend you review the information contained in this report and then apply it to the needs of your agency. This report is not an endorsement of products, but a means of learning what's available for your officers so they can do their job effectively and safely. If anything in this report requires further explanation or clarification, please call or write.

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ACKNOWLEDGEMENTS

We would like to thank the following contributors. We are grateful for their support and encouragement toward our ultimate goal: a safe, successful testing program that benefits the law enforcement community nationwide and beyond.

Colonel Kriste Kibbey Etue, Director, Michigan Department of State Police
Lt. Colonel Thomas W. Sands, Deputy Director, Field Services Bureau
Lt. Colonel Richard T. Arnold, Deputy Director, State Services Bureau
Lt. Colonel Gary M. Gorski, Deputy Director, Specialized Services Bureau
Mr. Shawn Sible, Deputy Director, Administrative Services Bureau
Personnel from the Michigan Department of Technology, Management and Budget, Vehicle and Travel Services

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Ms. Heather Gulley and personnel from Chrysler Proving Grounds
Mr. Sam Faasen and personnel from Grattan Raceway Park

The Michigan State Police Rockford Post for their assistance at Grattan Raceway.

A very special “thank you” to Chrysler, Ford Motor Company, General Motors, BMW Motorrad USA, Harley-Davidson Motorcycles, Moto Guzzi, and Victory Motorcycles for their hard work in building and preparing the test cars and motorcycles. We are grateful for your dedication to law enforcement. Everyday law enforcement looks to these vehicles/motorcycles to do a list of varied duties.

Finally, thank you to all in the United States and Canada who represent law enforcement and purchasing agencies for your constant encouragement and support. We are proud to make a contribution to the law enforcement community.

Michigan State Police Vehicle Test Team:

Back Row: Ret. Sgt. David “Doc” Halliday, Tpr. Nate Johnson, Sgt. Marcus Trammel, Tpr. Jeff Mercer, Sgt. Doug Schutter, Sgt. Mike McCarthy, Tpr. Russ Lady, Tpr. Jay Sweetland, Sgt. Brian DeWyse

Front Row: Ret. Sgt. Bob Ring, Lt. Ron Gromak, Tpr. Andy Douville, Sgt. Matt Rogers, F/Lt. Jim Flegel, Mrs. Wendy Galbreath, Mrs. Debbie Schrauben, Mrs. Tricia Steel, Sgt. Matt Waters

TEST EQUIPMENT

The following test equipment is utilized during the Acceleration, Top Speed, Braking, and Vehicle Dynamics portions of the evaluation program.

Kistler Company 39205 Country Club Drive Suite C20 Farmington Hills, MI 48331	• DLS Smart Sensor – Optical Non-Contact Speed & Distance Sensor • Kistler L-350 1 Axis Optical Sensor • Kistler CDS-GPS CGPSLA 100 hz Logger
Shoei Helmets 3002 Dow Avenue Suite 128 Tustin, CA 92780	• Law Enforcement Helmet – Model RJ-Air LE • Motorcycle Helmet – Multi-Tech
AMB i.t. US-INC 1631 Phoenix Blvd. Suite 11 College Park, GA 30349	• AMB TranX Extended Loop Decoder • AMB TranX260 Transponders
Alpinestars USA 2780 W. 237th Street Torrance, CA 90505-5270	• Alpinestars Protective Riding Apparel

TEST VEHICLE DESCRIPTIONS AND PHOTOGRAPHS

Chevrolet Caprice
3.6L

TEST VEHICLE DESCRIPTION

MAKE Chevrolet	**MODEL** Caprice		**SALES CODE NO.** 1EW19	
ENGINE DISPLACEMENT	**CUBIC INCHES** 217		**LITERS** 3.6	
FUEL SYSTEM	SIDI (E85 capable)		**EXHAUST** Dual	
HORSEPOWER (SAE NET)	301 Hp @ 6700 RPM		**ALTERNATOR** 170 AMP	
TORQUE	265 ft. – lbs. @ 4800 RPM		**BATTERY** AGM 700 CCA (Auxilliary Battery also 700 CCA)	
COMPRESSION RATIO	11.3:1			
TRANSMISSION	**MODEL** 6L45	**TYPE** Column Shift, 6-Speed Automatic		
	LOCKUP TORQUE CONVERTER? Yes			
	OVERDRIVE? Yes			
AXLE RATIO	2.92:1 (Limited Slip Rear Wheel Drive)			
STEERING	Electric Power Rack and Pinion			
TURNING CIRCLE (CURB TO CURB)	38 ft.			
TIRE SIZE, LOAD & SPEED RATING	P235/50R18, 99W, Goodyear RSA			
SUSPENSION TYPE (FRONT)	Independent Strut. Coil Springs, & Stabilizer Bar			
SUSPENSION TYPE (REAR)	Independent Strut. Coil Springs, & Stabilizer Bar			
GROUND CLEARANCE, MINIMUM	6.0”	**LOCATION** Engine Cradle		
BRAKE SYSTEM	Power 4-Wheel Anti-Lock Heavy Duty Disc Brakes			
BRAKES, FRONT	**TYPE** Vented Disc		**SWEPT AREA** 310.6 sq. in.	
BRAKES, REAR	**TYPE** Vented Disc		**SWEPT AREA** 211.4 sq. in.	
FUEL CAPACITY	**GALLONS** 19.0		**LITERS** 72.0	
GENERAL MEASUREMENTS	**WHEELBASE** 118.5 in.		**LENGTH** 204.2 in.	
	TEST WEIGHT 4049 lbs.		**HEIGHT** 58.7 in.	
HEADROOM	**FRONT** 38.7 in.		**REAR** 37.6 in.	
LEGROOM	**FRONT** 42.2 in.		**REAR** 43.2 in.	
SHOULDER ROOM	**FRONT** 59.1 in.		**REAR** 59.0 in.	
HIPROOM	**FRONT** 57.5 in.		**REAR** 57.9 in.	
INTERIOR VOLUME	**FRONT** 56.0 cu. ft.		**REAR** 56.0 cu. ft.	
	COMB 112 cu. ft.		**TRUNK** 17.4 cu. ft. (includes full-size spare tire and auxiliary battery)	
MAXIMUM PAYLOAD CAPACITY (INCLUDING PASSENGERS)	1182 lbs.			
EPA MILEAGE EST. (MPG)	**CITY** 18	**HIGHWAY** 26	**COMBINED** 21	

Chevrolet Caprice
6.0L

TEST VEHICLE DESCRIPTION

MAKE Chevrolet	**MODEL** Caprice		**SALES CODE NO.** 1EW19	
ENGINE DISPLACEMENT	**CUBIC INCHES** 364		**LITERS** 6.0	
FUEL SYSTEM	SPFI		**EXHAUST** Dual	
HORSEPOWER (SAE NET)	355 Hp @ 5300 RPM		**ALTERNATOR** 170 AMP	
TORQUE	384 ft. – lbs. @ 4400 RPM		**BATTERY** AGM 700 CCA (Auxilliary Battery also 700 CCA)	
COMPRESSION RATIO	10.4:1			
TRANSMISSION	**MODEL** 6L80E	**TYPE** Column Shift, 6-Speed Automatic		
	LOCKUP TORQUE CONVERTER? Yes			
	OVERDRIVE? Yes			
AXLE RATIO	2.92:1 (Limited Slip Rear Wheel Drive)			
STEERING	Electric Power Rack and Pinion			
TURNING CIRCLE (CURB TO CURB)	38 ft.			
TIRE SIZE, LOAD & SPEED RATING	P235/50R18, 99W, Goodyear RSA			
SUSPENSION TYPE (FRONT)	Independent Strut. Coil Springs, & Stabilizer Bar			
SUSPENSION TYPE (REAR)	Independent Strut. Coil Springs, & Stabilizer Bar			
GROUND CLEARANCE, MINIMUM	6.0”	**LOCATION** Engine Cradle		
BRAKE SYSTEM	Power, Dual Hydraulic, Anti-Lock			
BRAKES, FRONT	**TYPE** Vented Disc		**SWEPT AREA** 310.6 sq. in.	
BRAKES, REAR	**TYPE** Vented Disc		**SWEPT AREA** 211.4 sq. in.	
FUEL CAPACITY	**GALLONS** 19.0		**LITERS** 72.0	
GENERAL MEASUREMENTS	**WHEELBASE** 118.5 in.		**LENGTH** 204.2 in.	
	TEST WEIGHT 4156 lbs.		**HEIGHT** 58.7 in.	
HEADROOM	**FRONT** 38.7 in.		**REAR** 37.6 in.	
LEGROOM	**FRONT** 42.2 in.		**REAR** 43.2 in.	
SHOULDER ROOM	**FRONT** 59.1 in.		**REAR** 59.0 in.	
HIPROOM	**FRONT** 57.5 in.		**REAR** 57.9 in.	
INTERIOR VOLUME	**FRONT** 56.0 cu. ft.		**REAR** 56.0 cu. ft.	
	COMB 112 cu. ft.		**TRUNK** 17.4 cu. ft. (includes full-size spare tire and auxiliary battery)	
MAXIMUM PAYLOAD CAPACITY (INCLUDING PASSENGERS)	1173 lbs.			
EPA MILEAGE EST. (MPG)	**CITY** 15	**HIGHWAY** 24	**COMBINED** 18	

Chevrolet Impala
3.6L

TEST VEHICLE DESCRIPTION

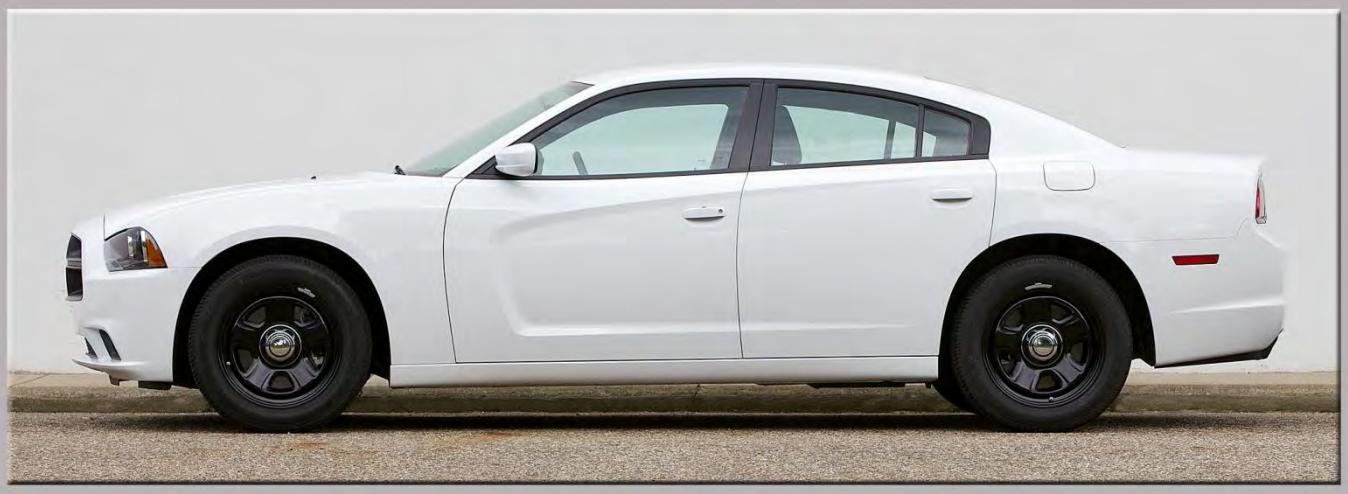
MAKE Chevrolet	**MODEL** Impala Limited 9C1		**SALES CODE NO.** 1WS19	
ENGINE DISPLACEMENT	**CUBIC INCHES** 217		**LITERS** 3.6	
FUEL SYSTEM	SIDI (E 85 Capable)		**EXHAUST** Single	
HORSEPOWER (SAE NET)	302 Hp @ 6800 RPM		**ALTERNATOR** 170 AMP	
TORQUE	262 ft. – lbs. @ 5300 RPM		**BATTERY** 720 CCA	
COMPRESSION RATIO	11.5:1			
TRANSMISSION	**MODEL** 6T70	**TYPE** 6-Speed Automatic		
	LOCKUP TORQUE CONVERTER? Yes			
	OVERDRIVE? Yes			
AXLE RATIO	2.44:1			
STEERING	Power Rack and Pinion			
TURNING CIRCLE (CURB TO CURB)	38 ft.			
TIRE SIZE, LOAD & SPEED RATING	P235/55R17, 98W, Goodyear A/S			
SUSPENSION TYPE (FRONT)	Independent McPherson Struts, Coil Springs, & Stabilizer Bar			
SUSPENSION TYPE (REAR)	Independent Tri-Link Coil Spring Over Strut & Stabilizer Bar			
GROUND CLEARANCE, MINIMUM	6.5”	**LOCATION** Engine Cradle		
BRAKE SYSTEM	Power, Dual Hydraulic, Anti-Lock			
BRAKES, FRONT	**TYPE** Vented Disc		**SWEPT AREA** 246.3 sq. in.	
BRAKES, REAR	**TYPE** Solid Disc		**SWEPT AREA** 175.8 sq. in.	
FUEL CAPACITY	**GALLONS** 17.0		**LITERS** 64.0	
GENERAL MEASUREMENTS	**WHEELBASE** 110.5 in.		**LENGTH** 200.4 in.	
	TEST WEIGHT 3750 lbs.		**HEIGHT** 58.7 in.	
HEADROOM	**FRONT** 39.4 in.		**REAR** 37.8 in.	
LEGROOM	**FRONT** 42.3 in.		**REAR** 37.6 in.	
SHOULDER ROOM	**FRONT** 58.7 in.		**REAR** 58.6 in.	
HIPROOM	**FRONT** 56.4 in.		**REAR** 57.2 in.	
INTERIOR VOLUME	**FRONT** 56.6 cu. ft.		**REAR** 48.2 cu. ft.	
	COMB 105 cu. ft.		**TRUNK** 18.6 cu. ft. (Full Size Spare: 15.9 cu. ft.)	
MAXIMUM PAYLOAD CAPACITY (INCLUDING PASSENGERS)	1140 lbs.			
EPA MILEAGE EST. (MPG)	**CITY** 17	**HIGHWAY** 28	**COMBINED** 21	

Chevrolet Tahoe
5.3L

TEST VEHICLE DESCRIPTION

MAKE Chevrolet	**MODEL** Tahoe PPV – 2WD		**SALES CODE NO.** CC10706	
ENGINE DISPLACEMENT	**CUBIC INCHES** 325		**LITERS** 5.3	
FUEL SYSTEM	SFI (E85 Capable)		**EXHAUST** Single	
HORSEPOWER (SAE NET)	320 Hp @ 5400 RPM		**ALTERNATOR** 160 AMP	
TORQUE	335 ft. – lbs. @ 4000 RPM		**BATTERY** 660 CCA	
COMPRESSION RATIO	9.9:1			
TRANSMISSION	**MODEL** 6L80E	**TYPE** 6-Speed Automatic		
	LOCKUP TORQUE CONVERTER? Yes			
	OVERDRIVE? Yes			
AXLE RATIO	3.08 Rear Wheel Drive, Heavy Duty Locking Differential			
STEERING	Power Rack and Pinion			
TURNING CIRCLE (CURB TO CURB)	39 ft.			
TIRE SIZE, LOAD & SPEED RATING	P265/60R17, 108V, Goodyear RSA			
SUSPENSION TYPE (FRONT)	Independent Single Coil Over Shock with Stabilizer Bar			
SUSPENSION TYPE (REAR)	Multi-Link with Coil Springs			
GROUND CLEARANCE, MINIMUM	8.0”	**LOCATION** Rear Axle		
BRAKE SYSTEM	Vacuum Boost, Power, Anti-Lock			
BRAKES, FRONT	**TYPE** Vented Disc		**SWEPT AREA** 256.6 sq. in.	
BRAKES, REAR	**TYPE** Vented Disc		**SWEPT AREA** 248 sq. in.	
FUEL CAPACITY	**GALLONS** 26.0		**LITERS** 98.0	
GENERAL MEASUREMENTS	**WHEELBASE** 116 in.		**LENGTH** 202 in.	
	TEST WEIGHT 5312 lbs.		**HEIGHT** 73.9 in.	
HEADROOM	**FRONT** 41.1 in.		**REAR** 39.2 in.	
LEGROOM	**FRONT** 41.3 in.		**REAR** 39.0 in.	
SHOULDER ROOM	**FRONT** 65.2 in.		**REAR** 65.2 in.	
HIPROOM	**FRONT** 60.3 in.		**REAR** 60.6 in.	
INTERIOR VOLUME	**FRONT** 64.1 cu. ft.		**REAR** 57.7 cu. ft.	
	COMB 121.8 cu. ft.		**TRUNK** 108.9 cu. ft.	
MAXIMUM PAYLOAD CAPACITY (INCLUDING PASSENGERS)	1516 lbs.			
EPA MILEAGE EST. (MPG)	**CITY** 15	**HIGHWAY** 21	**COMBINED** 17	

2014.5 Dodge Charger
2.65 3.6L



TEST VEHICLE DESCRIPTION

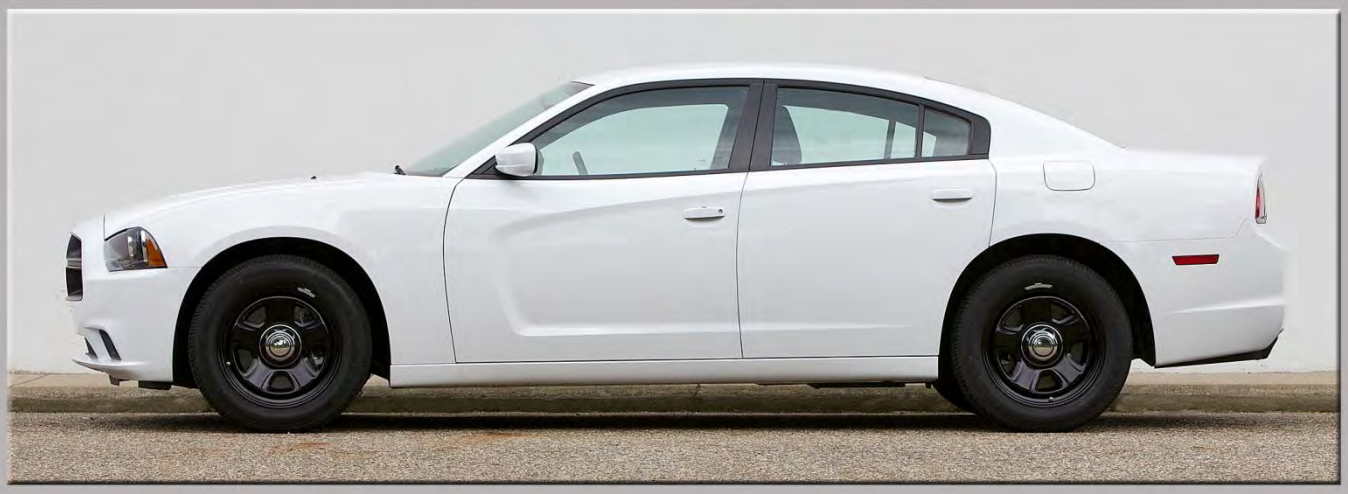
MAKE 2014.5 Dodge	**MODEL** Charger		**SALES CODE NO.** 27A	
ENGINE DISPLACEMENT	**CUBIC INCHES** 220		**LITERS** 3.6	
FUEL SYSTEM	Sequential Port Fuel Injection		**EXHAUST** Dual	
HORSEPOWER (SAE NET)	292 Hp @ 6400 RPM		**ALTERNATOR** 220 AMP	
TORQUE	260 ft. – lbs. @ 4400 RPM		**BATTERY** 800 CCA	
COMPRESSION RATIO	10.2:1			
TRANSMISSION	**MODEL** A580	**TYPE** 5 Speed Electronic Automatic		
	LOCKUP TORQUE CONVERTER? Yes			
	OVERDRIVE? Yes			
AXLE RATIO	2.65:1			
STEERING	Rack & Pinion with Hydraulic Power Assist			
TURNING CIRCLE (CURB TO CURB)	37.7 ft.			
TIRE SIZE, LOAD & SPEED RATING	P225/60R18, 99W, Goodyear Eagle RSA			
SUSPENSION TYPE (FRONT)	Independent SLA with Virtual Ball Joint LCA, Coil Spring, Sway Bar			
SUSPENSION TYPE (REAR)	Independent Multi-Link, Coil Spring, Sway Bar			
GROUND CLEARANCE, MINIMUM	5.1”	**LOCATION** Fascia Belly Pan		
BRAKE SYSTEM	Power, Dual Piston Front/Single Piston Rear, Anti-Lock			
BRAKES, FRONT	**TYPE** Vented Disc		**SWEPT AREA** 388 sq. in.	
BRAKES, REAR	**TYPE** Vented Disc		**SWEPT AREA** 296 sq. in.	
FUEL CAPACITY	**GALLONS** 19.0		**LITERS** 72.0	
GENERAL MEASUREMENTS	**WHEELBASE** 120.0 in.		**LENGTH** 199.9 in.	
	TEST WEIGHT 4055 lbs.		**HEIGHT** 58.4 in.	
HEADROOM	**FRONT** 38.6 in.		**REAR** 36.7 in.	
LEGROOM	**FRONT** 41.8 in.		**REAR** 40.1 in.	
SHOULDER ROOM	**FRONT** 59.5 in.		**REAR** 57.9 in.	
HIPROOM	**FRONT** 56.2 in.		**REAR** 56.1 in.	
INTERIOR VOLUME	**FRONT** 55.6 cu. ft.		**REAR** 49.31 cu. ft.	
	COMB 104.7 cu. ft.		**TRUNK** 16.5 cu. ft.	
MAXIMUM PAYLOAD CAPACITY (INCLUDING PASSENGERS)	1111 lbs.			
EPA MILEAGE EST. (MPG)	**CITY** 18	**HIGHWAY** 27	**COMBINED** 21	

Dodge Charger
2.65 5.7L

TEST VEHICLE DESCRIPTION

MAKE Dodge	**MODEL** Charger		**SALES CODE NO.** 29A	
ENGINE DISPLACEMENT	**CUBIC INCHES** 345		**LITERS** 5.7	
FUEL SYSTEM	Sequential Port Fuel Injection		**EXHAUST** Dual	
HORSEPOWER (SAE NET)	370 Hp @ 5150 RPM		**ALTERNATOR** 220 AMP	
TORQUE	397 ft. – lbs. @ 4250 RPM		**BATTERY** 800 CCA	
COMPRESSION RATIO	10.5:1			
TRANSMISSION	**MODEL** A580	**TYPE** 5 Speed Electronic Automatic		
	LOCKUP TORQUE CONVERTER? Yes			
	OVERDRIVE? Yes			
AXLE RATIO	2.65:1			
STEERING	Rack & Pinion with Hydraulic Power Assist			
TURNING CIRCLE (CURB TO CURB)	37.7 ft.			
TIRE SIZE, LOAD & SPEED RATING	P225/60R18, 99W, Goodyear Eagle RSA			
SUSPENSION TYPE (FRONT)	Independent SLA with Virtual Ball Joint LCA, Coil Spring, Sway Bar			
SUSPENSION TYPE (REAR)	Independent Multi-Link, Coil Spring, Sway Bar			
GROUND CLEARANCE, MINIMUM	5.1”	**LOCATION** Fascia Belly Pan		
BRAKE SYSTEM	Power, Dual Piston Front/Single Piston Rear, Anti-Lock			
BRAKES, FRONT	**TYPE** Vented Disc		**SWEPT AREA** 289 sq. in.	
BRAKES, REAR	**TYPE** Vented Disc		**SWEPT AREA** 291 sq. in.	
FUEL CAPACITY	**GALLONS** 19.0		**LITERS** 72.0	
GENERAL MEASUREMENTS	**WHEELBASE** 120.0 in.		**LENGTH** 199.9 in.	
	TEST WEIGHT 4281 lbs.		**HEIGHT** 58.4 in.	
HEADROOM	**FRONT** 38.6 in.		**REAR** 36.7 in.	
LEGROOM	**FRONT** 41.8 in.		**REAR** 40.1 in.	
SHOULDER ROOM	**FRONT** 59.5 in.		**REAR** 57.9 in.	
HIPROOM	**FRONT** 56.2 in.		**REAR** 56.1 in.	
INTERIOR VOLUME	**FRONT** 55.6 cu. ft.		**REAR** 49.31 cu. ft.	
	COMB 104.7 cu. ft.		**TRUNK** 16.5 cu. ft.	
MAXIMUM PAYLOAD CAPACITY (INCLUDING PASSENGERS)	1101 lbs.			
EPA MILEAGE EST. (MPG)	**CITY** 15	**HIGHWAY** 25	**COMBINED** 18	

Dodge Charger
3.07 3.6L



TEST VEHICLE DESCRIPTION

MAKE Dodge	**MODEL** Charger		**SALES CODE NO.** 27A	
ENGINE DISPLACEMENT	**CUBIC INCHES** 220		**LITERS** 3.6	
FUEL SYSTEM	Sequential Port Fuel Injection		**EXHAUST** Dual	
HORSEPOWER (SAE NET)	292 Hp @ 6400 RPM		**ALTERNATOR** 220 AMP	
TORQUE	260 ft. – lbs. @ 4400 RPM		**BATTERY** 800 CCA	
COMPRESSION RATIO	10.2:1			
TRANSMISSION	**MODEL** A580	**TYPE** 5 Speed Electronic Automatic		
	LOCKUP TORQUE CONVERTER? Yes			
	OVERDRIVE? Yes			
AXLE RATIO	3.07:1			
STEERING	Rack & Pinion with Hydraulic Power Assist			
TURNING CIRCLE (CURB TO CURB)	37.7 ft.			
TIRE SIZE, LOAD & SPEED RATING	P225/60R18, 99W, Goodyear Eagle RSA			
SUSPENSION TYPE (FRONT)	Independent SLA with Virtual Ball Joint LCA, Coil Spring, Sway Bar			
SUSPENSION TYPE (REAR)	Independent Multi-Link, Coil Spring, Sway Bar			
GROUND CLEARANCE, MINIMUM	5.1”	**LOCATION** Fascia Belly Pan		
BRAKE SYSTEM	Power, Dual Piston Front/Single Piston Rear, Anti-Lock			
BRAKES, FRONT	**TYPE** Vented Disc		**SWEPT AREA** 289 sq. in.	
BRAKES, REAR	**TYPE** Vented Disc		**SWEPT AREA** 291 sq. in.	
FUEL CAPACITY	**GALLONS** 19.0		**LITERS** 72.0	
GENERAL MEASUREMENTS	**WHEELBASE** 120.0 in.		**LENGTH** 199.9 in.	
	TEST WEIGHT 4097 lbs.		**HEIGHT** 58.4 in.	
HEADROOM	**FRONT** 38.6 in.		**REAR** 36.7 in.	
LEGROOM	**FRONT** 41.8 in.		**REAR** 40.1 in.	
SHOULDER ROOM	**FRONT** 59.5 in.		**REAR** 57.9 in.	
HIPROOM	**FRONT** 56.2 in.		**REAR** 56.1 in.	
INTERIOR VOLUME	**FRONT** 55.6 cu. ft.		**REAR** 49.31 cu. ft.	
	COMB 104.7 cu. ft.		**TRUNK** 16.5 cu. ft.	
MAXIMUM PAYLOAD CAPACITY (INCLUDING PASSENGERS)	1111 lbs.			
EPA MILEAGE EST. (MPG)	**CITY** 18	**HIGHWAY** 27	**COMBINED** 21	

2014.5 Dodge Charger
2.65 5.7L

TEST VEHICLE DESCRIPTION

MAKE 2014.5 Dodge	**MODEL** Charger		**SALES CODE NO.** 29A	
ENGINE DISPLACEMENT	**CUBIC INCHES** 345		**LITERS** 5.7	
FUEL SYSTEM	Sequential Port Fuel Injection		**EXHAUST** Dual	
HORSEPOWER (SAE NET)	370 Hp @ 5150 RPM		**ALTERNATOR** 220 AMP	
TORQUE	397 ft. – lbs. @ 4250 RPM		**BATTERY** 800 CCA	
COMPRESSION RATIO	10.5:1			
TRANSMISSION	**MODEL** A580	**TYPE** 5 Speed Electronic Automatic		
	LOCKUP TORQUE CONVERTER? Yes			
	OVERDRIVE? Yes			
AXLE RATIO	2.65:1			
STEERING	Rack & Pinion with Hydraulic Power Assist			
TURNING CIRCLE (CURB TO CURB)	37.7 ft.			
TIRE SIZE, LOAD & SPEED RATING	P225/60R18, 99W, Goodyear Eagle RSA			
SUSPENSION TYPE (FRONT)	Independent SLA with Virtual Ball Joint LCA, Coil Spring, Sway Bar			
SUSPENSION TYPE (REAR)	Independent Multi-Link, Coil Spring, Sway Bar			
GROUND CLEARANCE, MINIMUM	5.1”	**LOCATION** Fascia Belly Pan		
BRAKE SYSTEM	Power, Dual Piston Front/Single Piston Rear, Anti-Lock			
BRAKES, FRONT	**TYPE** Vented Disc		**SWEPT AREA** 388 sq. in.	
BRAKES, REAR	**TYPE** Vented Disc		**SWEPT AREA** 296 sq. in.	
FUEL CAPACITY	**GALLONS** 19.0		**LITERS** 72.0	
GENERAL MEASUREMENTS	**WHEELBASE** 120.0 in.		**LENGTH** 199.9 in.	
	TEST WEIGHT 4324 lbs.		**HEIGHT** 58.4 in.	
HEADROOM	**FRONT** 38.6 in.		**REAR** 36.7 in.	
LEGROOM	**FRONT** 41.8 in.		**REAR** 40.1 in.	
SHOULDER ROOM	**FRONT** 59.5 in.		**REAR** 57.9 in.	
HIPROOM	**FRONT** 56.2 in.		**REAR** 56.1 in.	
INTERIOR VOLUME	**FRONT** 55.6 cu. ft.		**REAR** 49.31 cu. ft.	
	COMB 104.7 cu. ft.		**TRUNK** 16.5 cu. ft.	
MAXIMUM PAYLOAD CAPACITY (INCLUDING PASSENGERS)	1101 lbs.			
EPA MILEAGE EST. (MPG)	**CITY** 15	**HIGHWAY** 25	**COMBINED** 18	

2014.5 Dodge Charger
AWD 3.06 5.7L

TEST VEHICLE DESCRIPTION

MAKE 2014.5 Dodge	**MODEL** Charger AWD		**SALES CODE NO.** 29A		
ENGINE DISPLACEMENT	**CUBIC INCHES** 345		**LITERS** 5.7		
FUEL SYSTEM	Sequential Port Fuel Injection		**EXHAUST** Dual		
HORSEPOWER (SAE NET)	370 Hp @ 5150 RPM		**ALTERNATOR** 220 AMP		
TORQUE	397 ft. – lbs. @ 4250 RPM		**BATTERY** 800 CCA		
COMPRESSION RATIO	10.5:1				
TRANSMISSION	**MODEL** A580	**TYPE** 5 Speed Electronic Automatic			
	LOCKUP TORQUE CONVERTER? Yes				
	OVERDRIVE? Yes				
AXLE RATIO	3.06:1 with All-Wheel Drive				
STEERING	Rack & Pinion with Hydraulic Power Assist				
TURNING CIRCLE (CURB TO CURB)	38.7 ft.				
TIRE SIZE, LOAD & SPEED RATING	P245/55R18, 103V, Goodyear Eagle RSA				
SUSPENSION TYPE (FRONT)	Independent SLA LCA, Coil Spring, Sway Bar				
SUSPENSION TYPE (REAR)	Independent Multi-Link, Coil Spring, Sway Bar				
GROUND CLEARANCE, MINIMUM	5.1”	**LOCATION** Fascia Belly Pan			
BRAKE SYSTEM	Power, Dual Piston Front/Single Piston Rear, Anti-Lock				
BRAKES, FRONT	**TYPE** Vented Disc		**SWEPT AREA** 388 sq. in.		
BRAKES, REAR	**TYPE** Vented Disc		**SWEPT AREA** 296 sq. in.		
FUEL CAPACITY	**GALLONS** 19.0		**LITERS** 72.0		
GENERAL MEASUREMENTS	**WHEELBASE** 120.0 in.		**LENGTH** 199.9 in.		
	TEST WEIGHT 4521 lbs.		**HEIGHT** 58.4 in.		
HEADROOM	**FRONT** 38.6 in.		**REAR** 36.7 in.		
LEGROOM	**FRONT** 41.8 in.		**REAR** 40.1 in.		
SHOULDER ROOM	**FRONT** 59.5 in.		**REAR** 57.9 in.		
HIPROOM	**FRONT** 56.2 in.		**REAR** 56.1 in.		
INTERIOR VOLUME	**FRONT** 55.6 cu. ft.		**REAR** 49.31 cu. ft.		
	COMB 104.7 cu. ft.		**TRUNK** 16.5 cu. ft.		
EPA MILEAGE EST. (MPG)	**CITY** 15	**HIGHWAY** 23	**COMBINED** 18		

Ford Police Interceptor
FWD 3.5L

TEST VEHICLE DESCRIPTION

MAKE Ford	**MODEL** PI Sedan FWD			**SALES CODE NO.** P2L, 998	
ENGINE DISPLACEMENT	**CUBIC INCHES** 214			**LITERS** 3.5	
FUEL SYSTEM	Sequential Multi-Port Fuel Injection			**EXHAUST** Quasi-Dual	
HORSEPOWER (SAE NET)	288 Hp @ 6500 RPM			**ALTERNATOR** 220 AMP	
TORQUE	254 ft. – lbs. @ 4000 RPM			**BATTERY** 750 CCA	
COMPRESSION RATIO	10.8:1				
TRANSMISSION	**MODEL** 6F50		**TYPE** 6 Speed Electronic Automatic		
	LOCKUP TORQUE CONVERTER? Yes				
	OVERDRIVE? Yes				
AXLE RATIO	3.16:1				
STEERING	Electric Power Assist Rack & Pinion				
TURNING CIRCLE (CURB TO CURB)	38.4 ft.				
TIRE SIZE, LOAD & SPEED RATING	P245/55R18, 103V, Goodyear Eagle RSA				
SUSPENSION TYPE (FRONT)	Independent MacPherson Strut with Coil Over Shocks				
SUSPENSION TYPE (REAR)	Multi-Link Full Independent Suspension				
GROUND CLEARANCE, MINIMUM	6.0”		**LOCATION** Front Exhaust		
BRAKE SYSTEM	Power, Dual Piston Front/Single Piston Rear, 4 Circuit and Anti-Lock				
BRAKES, FRONT	**TYPE** Vented Disc			**SWEPT AREA** 313 sq. in.	
BRAKES, REAR	**TYPE** Vented Disc			**SWEPT AREA** 265 sq. in.	
FUEL CAPACITY	**GALLONS** 19.0			**LITERS** 71.9	
GENERAL MEASUREMENTS	**WHEELBASE** 112.9 in.			**LENGTH** 202.9 in.	
	TEST WEIGHT 4269 lbs.			**HEIGHT** 61.3 in.	
HEADROOM	**FRONT** 39.0 in.			**REAR** 36.7 in.	
LEGROOM	**FRONT** 41.9 in.			**REAR** 39.9 in.	
SHOULDER ROOM	**FRONT** 57.9 in.			**REAR** 56.9 in.	
HIPROOM	**FRONT** 56.3 in.			**REAR** 55.9 in.	
INTERIOR VOLUME	**FRONT** 54.8 cu. ft.			**REAR** 48.1 cu. ft.	
	COMB 103.0 cu. ft.			**TRUNK** 16.6 cu. ft. (Standard Full Size Spare)	
EPA MILEAGE EST. (MPG)	**CITY** 18		**HIGHWAY** 26		**COMBINED** 21

Ford Police Interceptor
AWD 3.7L

TEST VEHICLE DESCRIPTION

MAKE Ford	**MODEL** PI Sedan AWD			**SALES CODE NO.** P2M, 99K	
ENGINE DISPLACEMENT	**CUBIC INCHES** 226			**LITERS** 3.7	
FUEL SYSTEM	Sequential Multi-Port Fuel Injection			**EXHAUST** Dual	
HORSEPOWER (SAE NET)	305 Hp @ 6500 RPM			**ALTERNATOR** 220 AMP	
TORQUE	279 ft. – lbs. @ 4000 RPM			**BATTERY** 750 CCA	
COMPRESSION RATIO	10.5:1				
TRANSMISSION	**MODEL** 6F50	**TYPE** 6 Speed Electronic Automatic			
	LOCKUP TORQUE CONVERTER? Yes				
	OVERDRIVE? Yes				
AXLE RATIO	3.39:1 with All-Wheel Drive				
STEERING	Electric Power Assist Rack & Pinion				
TURNING CIRCLE (CURB TO CURB)	38.4 ft.				
TIRE SIZE, LOAD & SPEED RATING	P245/55R18, 103V, Goodyear Eagle RSA				
SUSPENSION TYPE (FRONT)	Independent MacPherson Strut with Coil Over Shocks				
SUSPENSION TYPE (REAR)	Multi-Link Full Independent Suspension				
GROUND CLEARANCE, MINIMUM	6.0”	**LOCATION** Front Exhaust			
BRAKE SYSTEM	Power, Dual Piston Front/Single Piston Rear, 4 Circuit and Anti-Lock				
BRAKES, FRONT	**TYPE** Vented Disc		**SWEPT AREA** 313 sq. in.		
BRAKES, REAR	**TYPE** Vented Disc		**SWEPT AREA** 265 sq. in.		
FUEL CAPACITY	**GALLONS** 19.0		**LITERS** 71.9		
GENERAL MEASUREMENTS	**WHEELBASE** 112.9 in.		**LENGTH** 202.9 in.		
	TEST WEIGHT 4334 lbs.		**HEIGHT** 61.3 in.		
HEADROOM	**FRONT** 39.0 in.		**REAR** 36.7 in.		
LEGROOM	**FRONT** 41.9 in.		**REAR** 39.9 in.		
SHOULDER ROOM	**FRONT** 57.9 in.		**REAR** 56.9 in.		
HIPROOM	**FRONT** 56.3 in.		**REAR** 55.9 in.		
INTERIOR VOLUME	**FRONT** 54.8 cu. ft.		**REAR** 48.1 cu. ft.		
	COMB 103.0 cu. ft.		**TRUNK** 16.6 cu. ft. (Standard Full Size Spare)		
EPA MILEAGE EST. (MPG)	**CITY** 18	**HIGHWAY** 25	**COMBINED** 21		

Ford Police Interceptor
AWD Ecoboost 3.5L

TEST VEHICLE DESCRIPTION

MAKE Ford	**MODEL** PI Sedan Ecoboost AWD		**SALES CODE NO.** P2M, 99T
ENGINE DISPLACEMENT	**CUBIC INCHES** 214		**LITERS** 3.5
FUEL SYSTEM	Sequential Direct Injection		**EXHAUST** Dual
HORSEPOWER (SAE NET)	365 Hp @ 5500 RPM		**ALTERNATOR** 220 AMP
TORQUE	350 ft. – lbs. @ 1500 - 5250 RPM		**BATTERY** 750 CCA
COMPRESSION RATIO	10.0:1		
TRANSMISSION	**MODEL** 6F55	**TYPE** 6 Speed Electronic Automatic	
	LOCKUP TORQUE CONVERTER? Yes		
	OVERDRIVE? Yes		
AXLE RATIO	3.16:1 with All-Wheel Drive		
STEERING	Electric Power Assist Rack & Pinion		
TURNING CIRCLE (CURB TO CURB)	38.4 ft.		
TIRE SIZE, LOAD & SPEED RATING	P245/55R18, 103V, Goodyear Eagle RSA		
SUSPENSION TYPE (FRONT)	Independent MacPherson Strut with Coil Over Shocks		
SUSPENSION TYPE (REAR)	Multi-Link Full Independent Suspension		
GROUND CLEARANCE, MINIMUM	5.3”	**LOCATION** Front Exhaust	
BRAKE SYSTEM	Power, Dual Piston Front/Single Piston Rear, 4 Circuit and Anti-Lock		
BRAKES, FRONT	**TYPE** Vented Disc	**SWEPT AREA** 313 sq. in.	
BRAKES, REAR	**TYPE** Vented Disc	**SWEPT AREA** 265 sq. in.	
FUEL CAPACITY	**GALLONS** 19.0	**LITERS** 71.9	
GENERAL MEASUREMENTS	**WHEELBASE** 112.9 in.	**LENGTH** 202.9 in.	
	TEST WEIGHT 4406 lbs.	**HEIGHT** 61.3 in.	
HEADROOM	**FRONT** 39.0 in.	**REAR** 36.7 in.	
LEGROOM	**FRONT** 41.9 in.	**REAR** 39.9 in.	
SHOULDER ROOM	**FRONT** 57.9 in.	**REAR** 56.9 in.	
HIPROOM	**FRONT** 56.3 in.	**REAR** 55.9 in.	
INTERIOR VOLUME	**FRONT** 54.8 cu. ft.	**REAR** 48.1 cu. ft.	
	COMB 103.0 cu. ft.	**TRUNK** 16.6 cu. ft. (Standard Full Size Spare)	
EPA MILEAGE EST. (MPG)	**CITY** 16	**HIGHWAY** 23	**COMBINED** 18

Ford Police Interceptor Utility AWD 3.7L

TEST VEHICLE DESCRIPTION

MAKE Ford	**MODEL** PI Utility AWD			**SALES CODE NO.** K8A, 99R	
ENGINE DISPLACEMENT	**CUBIC INCHES** 226			**LITERS** 3.7	
FUEL SYSTEM	Sequential Multi-Port Fuel Injection			**EXHAUST** Dual	
HORSEPOWER (SAE NET)	304 Hp @ 6250 RPM			**ALTERNATOR** 220 AMP	
TORQUE	279 ft. – lbs. @ 4000 RPM			**BATTERY** 750 CCA	
COMPRESSION RATIO	10.5:1				
TRANSMISSION	**MODEL** 6F55	**TYPE** 6 Speed Electronic Automatic			
	LOCKUP TORQUE CONVERTER? Yes				
	OVERDRIVE? Yes				
AXLE RATIO	3.65:1 with All-Wheel Drive				
STEERING	Electric Power Assist Rack & Pinion				
TURNING CIRCLE (CURB TO CURB)	38.8 ft.				
TIRE SIZE, LOAD & SPEED RATING	P245/55R18, 103V, Goodyear Eagle RSA				
SUSPENSION TYPE (FRONT)	Independent MacPherson Strut with Coil Over Shocks				
SUSPENSION TYPE (REAR)	Multi-Link Full Independent Suspension				
GROUND CLEARANCE, MINIMUM	6.5”	**LOCATION** Front Exhaust			
BRAKE SYSTEM	Power, Dual Piston Front/Single Piston Rear, 4 Circuit and Anti-Lock				
BRAKES, FRONT	**TYPE** Vented Disc			**SWEPT AREA** 313 sq. in.	
BRAKES, REAR	**TYPE** Vented Disc			**SWEPT AREA** 265 sq. in.	
FUEL CAPACITY	**GALLONS** 18.6			**LITERS** 70.4	
GENERAL MEASUREMENTS	**WHEELBASE** 112.6 in.			**LENGTH** 197.1 in.	
	TEST WEIGHT 4654 lbs.			**HEIGHT** 69.2 in. (without roof rack)	
HEADROOM	**FRONT** 41.4 in.			**REAR** 40.1 in.	
LEGROOM	**FRONT** 40.6 in.			**REAR** 41.6 in.	
SHOULDER ROOM	**FRONT** 61.3 in.			**REAR** 60.9 in.	
HIPROOM	**FRONT** 57.3 in.			**REAR** 56.8 in.	
INTERIOR VOLUME	**FRONT** 59.7 cu. ft.			**REAR** 58.7 cu. ft.	
	COMB 118.4 cu. ft.			**MAX CARGO** 85.1 cu. ft. *(Max Cargo behind front seats, with rear seats folded down)*	
EPA MILEAGE EST. (MPG)	**CITY** 16	**HIGHWAY** 21	**COMBINED** 18		

2014.5 Ford Police Interceptor AWD Ecoboost 3.5L

TEST VEHICLE DESCRIPTION

MAKE 2014.5 Ford	**MODEL** PI Sedan Ecoboost AWD		**SALES CODE NO.** P2M, 99T		
ENGINE DISPLACEMENT	**CUBIC INCHES** 214		**LITERS** 3.5		
FUEL SYSTEM	Sequential Direct Injection		**EXHAUST** Dual		
HORSEPOWER (SAE NET)	365 Hp @ 5500 RPM		**ALTERNATOR** 220 AMP		
TORQUE	350 ft. – lbs. @ 1500-5250 RPM		**BATTERY** 750 CCA		
COMPRESSION RATIO	10.0:1				
TRANSMISSION	**MODEL** 6F55	**TYPE** 6 Speed Electronic Automatic			
	LOCKUP TORQUE CONVERTER? Yes				
	OVERDRIVE? Yes				
AXLE RATIO	3.16:1 with All-Wheel Drive				
STEERING	Electric Power Assist Rack & Pinion				
TURNING CIRCLE (CURB TO CURB)	38.4 ft.				
TIRE SIZE, LOAD & SPEED RATING	P245/55R18, 103V, Goodyear Eagle RSA				
SUSPENSION TYPE (FRONT)	Independent MacPherson Strut with Coil Over Shocks				
SUSPENSION TYPE (REAR)	Multi-Link Full Independent Suspension				
GROUND CLEARANCE, MINIMUM	5.3”	**LOCATION** Front Exhaust			
BRAKE SYSTEM	Power, Dual Piston Front/Single Piston Rear, 4 Circuit and Anti-Lock				
BRAKES, FRONT	**TYPE** Vented Disc		**SWEPT AREA** 313 sq. in.		
BRAKES, REAR	**TYPE** Vented Disc		**SWEPT AREA** 265 sq. in.		
FUEL CAPACITY	**GALLONS** 19.0		**LITERS** 71.9		
GENERAL MEASUREMENTS	**WHEELBASE** 112.9 in.		**LENGTH** 202.9 in.		
	TEST WEIGHT 4371 lbs.		**HEIGHT** 61.3 in.		
HEADROOM	**FRONT** 39.0 in.		**REAR** 36.7 in.		
LEGROOM	**FRONT** 41.9 in.		**REAR** 39.9 in.		
SHOULDER ROOM	**FRONT** 57.9 in.		**REAR** 56.9 in.		
HIPROOM	**FRONT** 56.3 in.		**REAR** 55.9 in.		
INTERIOR VOLUME	**FRONT** 54.8 cu. ft.		**REAR** 48.1 cu. ft.		
	COMB 103.0 cu. ft.		**TRUNK** 16.6 cu. ft. (Standard Full Size Spare)		
EPA MILEAGE EST. (MPG)	**CITY** 16	**HIGHWAY** 23	**COMBINED** 18		

2014.5 Ford Police Interceptor Utility AWD Ecoboost 3.5L

TEST VEHICLE DESCRIPTION

MAKE 2014.5 Ford	**MODEL** PI Sedan Utility AWD Ecoboost		**SALES CODE NO.** K8A, 99T	
ENGINE DISPLACEMENT	**CUBIC INCHES** 214		**LITERS** 3.5	
FUEL SYSTEM	Sequential Direct Injection		**EXHAUST** Dual	
HORSEPOWER (SAE NET)	365 Hp @ 5500 RPM		**ALTERNATOR** 220 AMP	
TORQUE	350 ft. – lbs. @ 1500-5250 RPM		**BATTERY** 750 CCA	
COMPRESSION RATIO	10.0:1			
TRANSMISSION	**MODEL** 6F55	**TYPE** 6 Speed Electronic Automatic		
	LOCKUP TORQUE CONVERTER? Yes			
	OVERDRIVE? Yes			
AXLE RATIO	3.16:1 with All-Wheel Drive			
STEERING	Electric Power Assist Rack & Pinion			
TURNING CIRCLE (CURB TO CURB)	38.8 ft.			
TIRE SIZE, LOAD & SPEED RATING	P245/55R18, 103V, Goodyear Eagle RSA			
SUSPENSION TYPE (FRONT)	Independent MacPherson Strut with Coil Over Shocks			
SUSPENSION TYPE (REAR)	Multi-Link Full Independent Suspension			
GROUND CLEARANCE, MINIMUM	6.4”	**LOCATION** Front Exhaust		
BRAKE SYSTEM	Power, Dual Piston Front/Single Piston Rear, 4 Circuit and Anti-Lock			
BRAKES, FRONT	**TYPE** Vented Disc		**SWEPT AREA** 313 sq. in.	
BRAKES, REAR	**TYPE** Vented Disc		**SWEPT AREA** 265 sq. in.	
FUEL CAPACITY	**GALLONS** 18.6		**LITERS** 70.4	
GENERAL MEASUREMENTS	**WHEELBASE** 112.6 in.		**LENGTH** 197.1 in.	
	TEST WEIGHT 4775 lbs.		**HEIGHT** 69.2 in. (without roof rack)	
HEADROOM	**FRONT** 41.4 in.		**REAR** 40.1 in.	
LEGROOM	**FRONT** 40.6 in.		**REAR** 41.6 in.	
SHOULDER ROOM	**FRONT** 61.3 in.		**REAR** 60.9 in.	
HIPROOM	**FRONT** 57.3 in.		**REAR** 56.8 in.	
INTERIOR VOLUME	**FRONT** 59.7 cu. ft.		**REAR** 58.7 cu. ft.	
	COMB 118.4 cu. ft.		**MAX CARGO** 85.1 cu. ft. (Max Cargo behind front seats, with rear seats folded down)	
EPA MILEAGE EST. (MPG)	**CITY** 15	**HIGHWAY** 20	**COMBINED** 17	

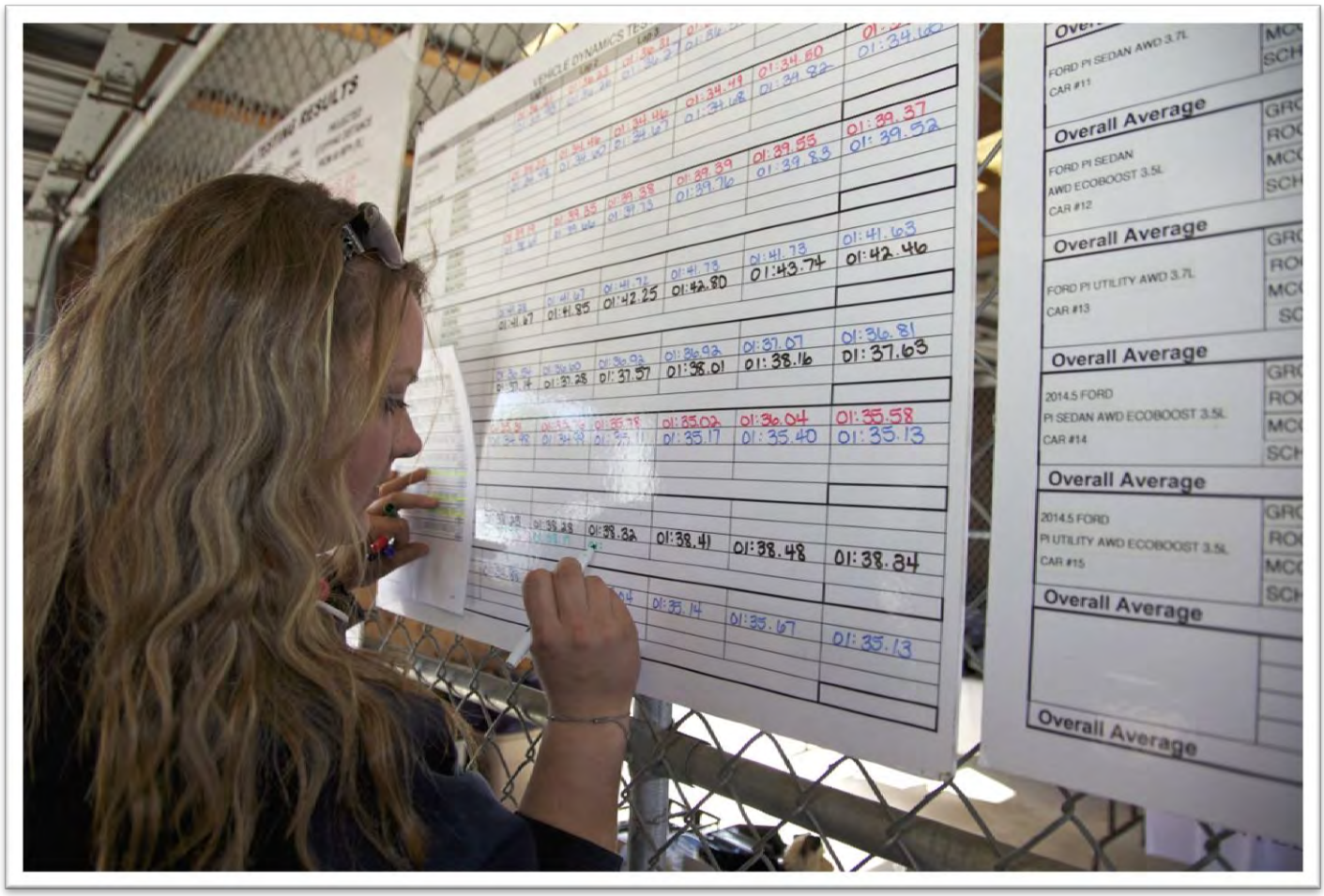
VEHICLE DYNAMICS TESTING

TEST OBJECTIVE

To determine each vehicle's high-speed pursuit or emergency response handling characteristics and performance in comparison to the other vehicles in the test group. The course used is a 2-mile road-racing type configuration, containing hills, curves, and corners. The course simulates actual conditions encountered in pursuit or emergency driving situations in the field, with the exception of other traffic. The evaluation is a true test of the success or failure of the vehicle manufacturers to offer vehicles that provide the optimum balance between handling (suspension components), acceleration (usable horsepower), and braking characteristics.

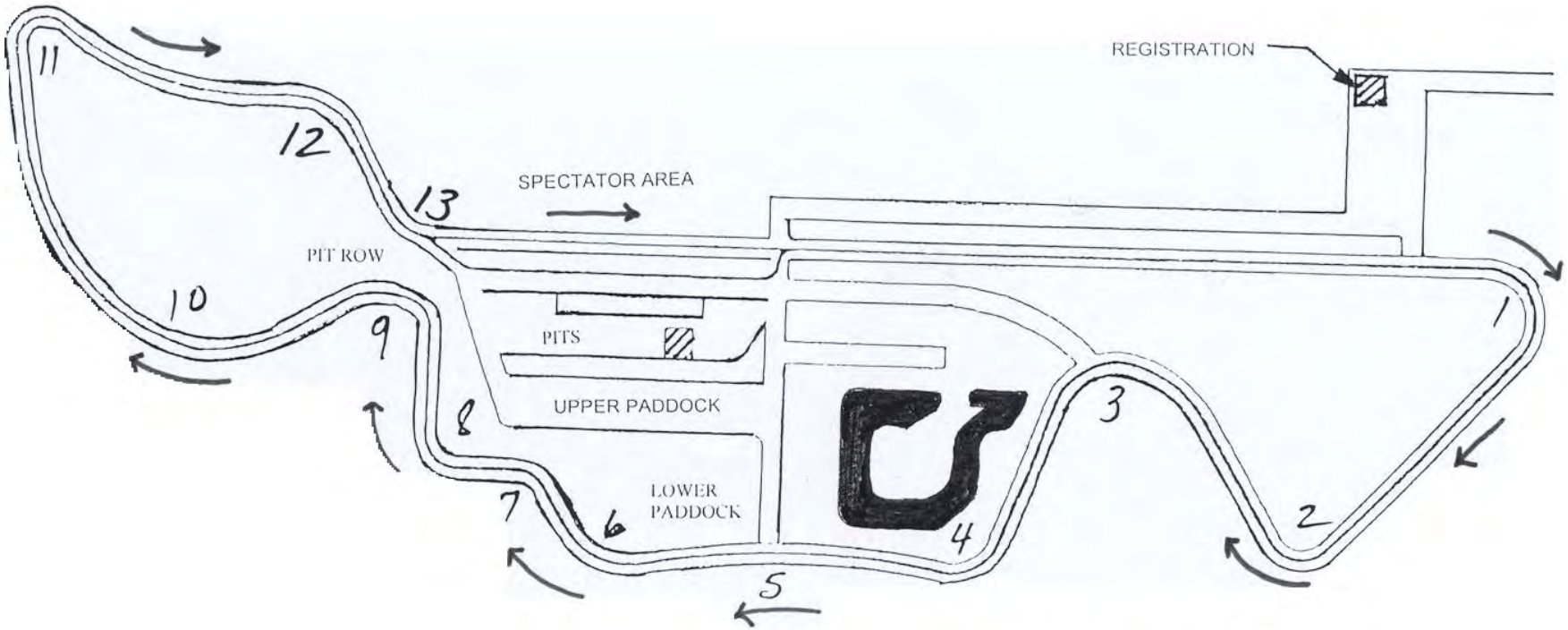
TEST METHODOLOGY

Each vehicle is driven over the course a total of 32 timed laps, using four separate drivers, each driving an 8 lap series. The final score for the vehicle is the combined average (from the 4 drivers) of the 5 fastest laps for each driver during the 8 lap series.



Grattan Raceway Park

7201 Lessiter
Belding, Michigan 48809



Arrows indicate Michigan State Police Road Test Course and Direction of Travel.

VEHICLE DYNAMICS TESTING ON SEPTEMBER 23, 2013

Vehicles	Drivers	Lap 1	Lap 2	Lap 3	Lap 4	Lap 5	Average
Chevrolet Caprice 3.6L	GROMAK	01:36.21	01:36.23	01:36.31	01:36.49	01:36.54	01:36.36
	ROGERS	01:35.93	01:36.26	01:36.27	01:36.51	01:36.56	01:36.31
	MCCARTHY	01:36.53	01:36.60	01:36.63	01:36.81	01:36.86	01:36.69
	SCHUTTER	01:37.03	01:37.09	01:37.11	01:37.27	01:37.46	01:37.19
Overall Average							**01:36.64**
Chevrolet Caprice 6.0L	GROMAK	01:34.31	01:34.46	01:34.46	01:34.49	01:34.50	01:34.44
	ROGERS	01:34.48	01:34.60	01:34.67	01:34.68	01:34.82	01:34.65
	MCCARTHY	01:34.97	01:35.00	01:35.14	01:35.15	01:35.30	01:35.11
	SCHUTTER	01:35.18	01:35.55	01:35.85	01:35.91	01:36.13	01:35.72
Overall Average							**01:34.98**
Chevrolet Impala 3.6L	GROMAK	01:39.19	01:39.35	01:39.38	01:39.39	01:39.55	01:39.37
	ROGERS	01:39.64	01:39.66	01:39.73	01:39.76	01:39.83	01:39.72
	MCCARTHY	01:40.09	01:40.13	01:40.21	01:40.22	01:40.30	01:40.19
	SCHUTTER	01:40.67	01:41.12	01:41.13	01:41.32	01:41.33	01:41.11
Overall Average							**01:40.10**
Chevrolet Tahoe 5.3L	GROMAK	01:41.85	01:41.97	01:42.16	01:42.19	01:42.54	01:42.14
	ROGERS	01:41.28	01:41.67	01:41.72	01:41.73	01:41.73	01:41.63
	MCCARTHY	01:41.67	01:41.85	01:42.25	01:42.80	01:43.74	01:42.46
	SCHUTTER	01:42.45	01:43.02	01:43.28	01:43.55	01:43.62	01:43.18
Overall Average							**01:42.35**
2014.5 Dodge Charger 2.65 3.6L	GROMAK	01:36.73	01:36.93	01:37.01	01:37.15	01:37.17	01:37.00
	ROGERS	01:36.54	01:36.60	01:36.92	01:36.92	01:37.07	01:36.81
	MCCARTHY	01:37.14	01:37.28	01:37.57	01:38.01	01:38.17	01:37.63
	SCHUTTER	01:37.42	01:37.45	01:37.80	01:37.81	01:37.98	01:37.69
Overall Average							**01:37.28**
Dodge Charger 2.65 5.7L	GROMAK	01:35.31	01:35.76	01:35.78	01:36.02	01:36.04	01:35.78
	ROGERS	01:34.98	01:34.99	01:35.12	01:35.17	01:35.40	01:35.13
	MCCARTHY	01:35.89	01:36.22	01:36.42	01:36.47	01:36.69	01:36.34
	SCHUTTER	01:36.16	01:36.77	01:36.81	01:36.94	01:37.01	01:36.74
Overall Average							**01:36.00**
Dodge Charger 3.07 3.6L	GROMAK	01:37.10	01:37.19	01:37.21	01:37.22	01:37.24	01:37.19
	ROGERS	01:36.05	01:36.32	01:36.73	01:36.78	01:36.97	01:36.57
	MCCARTHY	01:38.23	01:38.28	01:38.32	01:38.41	01:38.48	01:38.34
	SCHUTTER	01:37.77	01:38.17	01:38.17	01:38.22	01:38.29	01:38.12
Overall Average							**01:37.56**
2014.5 Dodge Charger 2.65 5.7L	GROMAK	01:35.50	01:35.51	01:35.57	01:35.88	01:35.94	01:35.68
	ROGERS	01:34.88	01:34.89	01:35.04	01:35.14	01:35.67	01:35.12
	MCCARTHY	01:35.62	01:35.94	01:35.97	01:36.19	01:36.27	01:36.00
	SCHUTTER	01:35.95	01:36.04	01:36.51	01:36.60	01:36.89	01:36.40
Overall Average							**01:35.80**
2014.5 Dodge Charger AWD 3.06 5.7L	GROMAK	01:34.40	01:34.41	01:34.55	01:34.60	01:34.64	01:34.52
	ROGERS	01:33.85	01:34.13	01:34.23	01:34.23	01:34.40	01:34.17
	MCCARTHY	01:34.38	01:34.55	01:34.59	01:34.90	01:34.93	01:34.67
	SCHUTTER	01:35.52	01:35.57	01:35.66	01:35.74	01:35.76	01:35.65
Overall Average							**01:34.75**

VEHICLE DYNAMICS TESTING ON SEPTEMBER 23, 2013

Vehicles	Drivers	Lap 1	Lap 2	Lap 3	Lap 4	Lap 5	Average
Ford PI Sedan FWD 3.5L	GROMAK	01:37.85	01:37.88	01:38.00	01:38.06	01:38.21	01:38.00
	ROGERS	01:38.06	01:38.23	01:38.28	01:38.36	01:38.44	01:38.27
	MCCARTHY	01:39.10	01:39.50	01:39.55	01:39.72	01:39.83	01:39.54
	SCHUTTER	01:38.51	01:39.22	01:39.29	01:39.45	01:39.50	01:39.19
Overall Average							**01:38.75**
Ford PI Sedan AWD 3.7L	GROMAK	01:37.11	01:37.28	01:37.29	01:37.42	01:37.52	01:37.32
	ROGERS	01:36.30	01:36.35	01:36.42	01:36.55	01:36.56	01:36.44
	MCCARTHY	01:38.22	01:38.29	01:38.31	01:38.41	01:38.53	01:38.35
	SCHUTTER	01:37.28	01:37.30	01:37.48	01:37.57	01:38.00	01:37.53
Overall Average							**01:37.41**
Ford PI Sedan AWD Ecoboost 3.5L	GROMAK	01:34.47	01:35.04	01:35.09	01:35.16	01:35.34	01:35.02
	ROGERS	01:34.67	01:34.90	01:35.08	01:35.09	01:35.11	01:34.97
	MCCARTHY	01:35.21	01:35.34	01:35.36	01:35.53	01:35.55	01:35.40
	SCHUTTER	01:35.12	01:35.28	01:35.35	01:35.53	01:35.55	01:35.37
Overall Average							**01:35.19**
Ford PI Utility AWD 3.7L	GROMAK	01:39.59	01:39.86	01:40.18	01:40.19	01:40.57	01:40.08
	ROGERS	01:39.10	01:39.53	01:39.72	01:39.77	01:39.99	01:39.62
	MCCARTHY	01:39.82	01:40.11	01:40.14	01:40.15	01:40.44	01:40.13
	SCHUTTER	01:40.59	01:40.65	01:40.74	01:40.84	01:41.03	01:40.77
Overall Average							**01:40.15**
2014.5 Ford PI AWD Ecoboost 3.5L	GROMAK	01:34.28	01:34.29	01:34.57	01:34.63	01:34.68	01:34.49
	ROGERS	01:34.54	01:34.63	01:34.72	01:34.73	01:34.78	01:34.68
	MCCARTHY	01:35.49	01:35.57	01:35.66	01:35.76	01:35.76	01:35.65
	SCHUTTER	01:34.90	01:35.38	01:35.53	01:35.56	01:35.58	01:35.39
Overall Average							**01:35.05**
2014.5 Ford PI Utility AWD Ecoboost 3.5L	GROMAK	01:37.11	01:37.19	01:37.30	01:37.48	01:37.48	01:37.31
	ROGERS	01:37.17	01:37.26	01:37.46	01:37.47	01:37.47	01:37.37
	MCCARTHY	01:37.84	01:38.13	01:38.13	01:38.30	01:38.37	01:38.15
	SCHUTTER	01:37.68	01:37.74	01:37.92	01:38.23	01:38.23	01:37.96
Overall Average							**01:37.70**

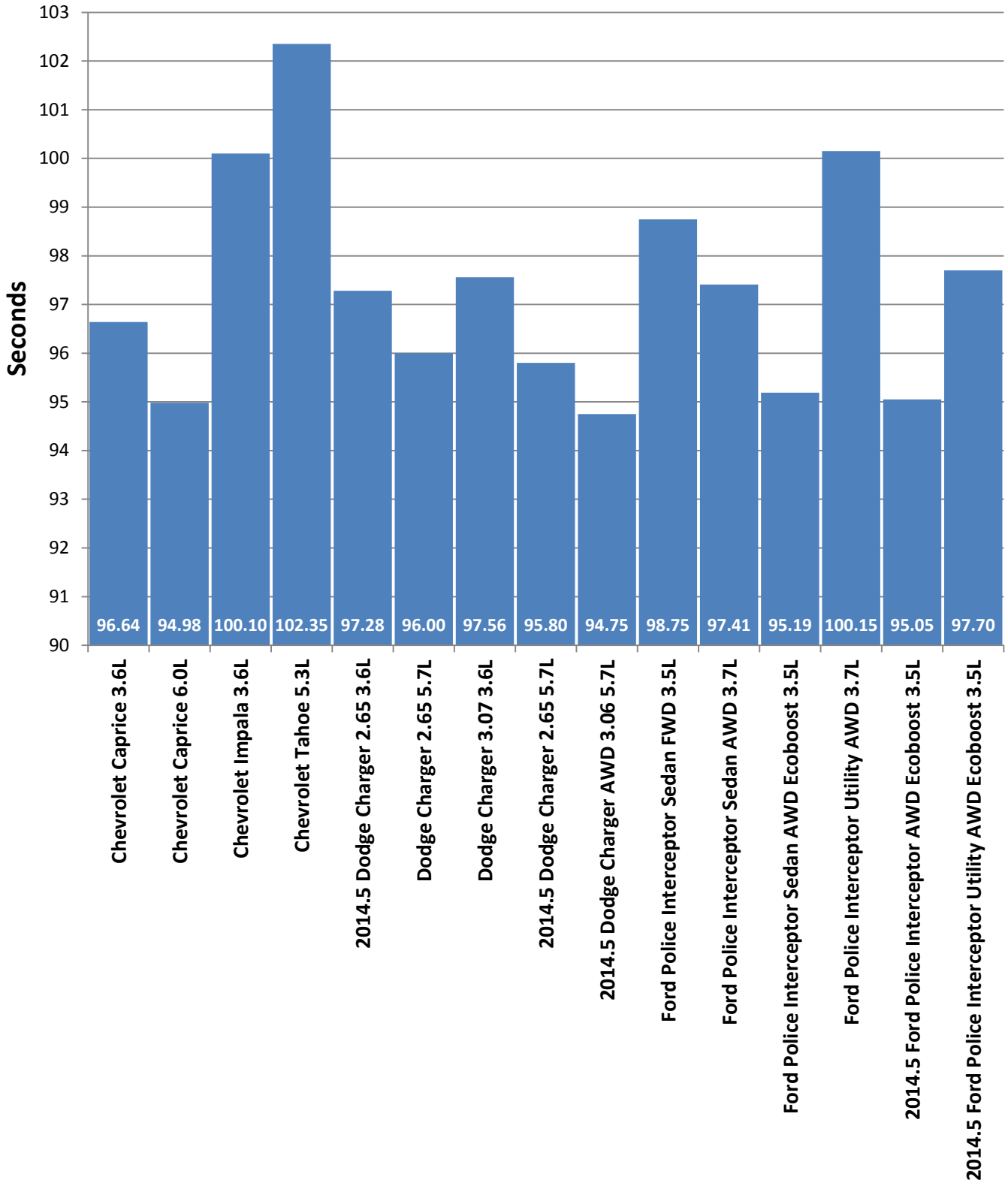
In an effort to maximize each vehicle's performance, we allowed each manufacturer to determine the state of their vehicles' traction and stability control modes while negotiating the vehicle dynamics testing at the Grattan Raceway.

Ford does not offer an option to alter the parameters of such controls and all of their vehicles were therefore tested in a fully activated mode.

Dodge elected to run their vehicles in a partial stability control mode which also deactivates traction control.

Chevrolet deactivated traction control on the Tahoe but ran with stability control full on. The Impala was run in partial stability control mode with traction control deactivated. The Caprice was run in the same mode as the Impala. The Caprice also offers a Sport transmission mode which changes the shift points in the transmission to aid in power train braking. Sport mode was also activated during the dynamics testing.

2014 Vehicle Dynamics



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Lap Times in Seconds

ACCELERATION AND TOP SPEED TESTING

ACCELERATION TEST OBJECTIVE

To determine the ability of each test vehicle to accelerate from a standing start to 60 mph, 80 mph, and 100 mph, and determine the distance to reach 110 mph and 120 mph.

ACCELERATION TEST METHODOLOGY

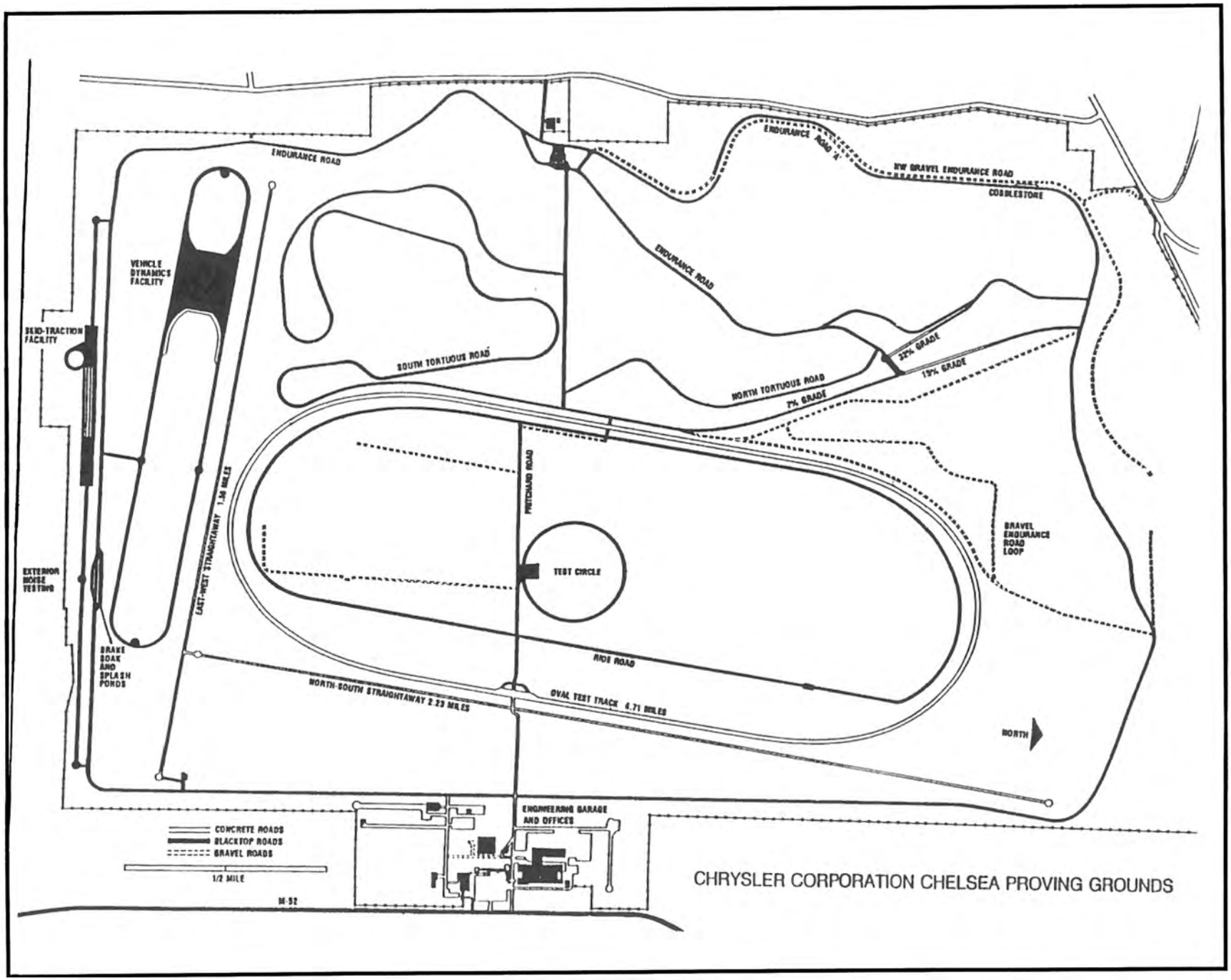
Using a DLS Smart Sensor – Optical non-contact Speed and Distance Sensor in conjunction with a lap top computer, each vehicle is driven through four acceleration sequences, two northbound and two southbound, to allow for wind direction. The four resulting times for each target speed are averaged and the average times used to derive scores on the competitive test for acceleration.

TOP SPEED TEST OBJECTIVE

Determine the actual top speed attainable by each test vehicle within a distance of 14 miles from a standing start.

TOP SPEED TEST METHODOLOGY

Following the fourth acceleration run, each test vehicle continues to accelerate to the top speed attainable within 14 miles from the start of the run. The highest speed attained within the 14 mile distance is the vehicle's score on the competitive test for top speed.


ENDURANCE ROAD
ENDURANCE ROAD II
NW GRAVEL ENDURANCE ROAD
COBBLESTONE
VEHICLE DYNAMICS FACILITY
SKID-TRACTION FACILITY
SOUTH TORTUOUS ROAD
NORTH TORTUOUS ROAD
32% GRADE
19% GRADE
7% GRADE
PRITCHARD ROAD
EAST-WEST STRAIGHTAWAY 1.50 MILES
TEST CIRCLE
BRAVEL ENDURANCE ROAD LOOP
EXTERIOR NOISE TESTING
BRAKE SOAK AND SPLASH PONDS
RIDE ROAD
NORTH-SOUTH STRAIGHTAWAY 2.23 MILES
OVAL TEST TRACK 4.71 MILES
NORTH
ENGINEERING GARAGE AND OFFICES
CONCRETE ROADS
BLACKTOP ROADS
GRAVEL ROADS
1/2 MILE
M-52
CHRYSLER CORPORATION CHELSEA PROVING GROUNDS

TEST LOCATION: Chrysler Proving Grounds **DATE:** September 21, 2013

Chevrolet Caprice 3.6L

BEGINNING TIME: 3:34 p.m. **TEMPERATURE:** 65.2° F
WIND VELOCITY: 10.2 mph **WIND DIRECTION:** 322°

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.0 sec.**	7.66	7.49	7.38	7.28	**7.45**
0 – 80	**14.9 sec.**	12.17	12.12	11.79	11.95	**12.01**
0 – 100	**24.6 sec.**	18.34	18.53	17.95	18.40	**18.31**

DISTANCE TO REACH 110 MPH: .44 mile
DISTANCE TO REACH 120 MPH: .69 mile

TOP SPEED ATTAINED: 148 mph

Chevrolet Caprice 6.0L

BEGINNING TIME: 2:17 p.m. **TEMPERATURE:** 66.1° F
WIND VELOCITY: 6 mph **WIND DIRECTION:** 309°

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.0 sec.**	6.04	6.14	5.92	5.94	**6.01**
0 – 80	**14.9 sec.**	9.72	9.87	9.58	9.63	**9.70**
0 – 100	**24.6 sec.**	14.33	14.57	14.17	14.32	**14.35**

DISTANCE TO REACH 110 MPH: .35 mile
DISTANCE TO REACH 120 MPH: .48 mile

TOP SPEED ATTAINED: 155 mph

Chevrolet Impala 3.6L

BEGINNING TIME: 10:31 a.m. **TEMPERATURE:** 59.8° F
WIND VELOCITY: 5.1 mph **WIND DIRECTION:** 324°

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.0 sec.**	7.77	7.75	7.64	7.51	**7.67**
0 – 80	**14.9 sec.**	12.67	12.76	12.36	12.35	**12.54**
0 – 100	**24.6 sec.**	19.43	19.76	18.99	19.43	**19.40**

DISTANCE TO REACH 110 MPH: .48 mile
DISTANCE TO REACH 120 MPH: .74 mile

TOP SPEED ATTAINED: 149 mph

Michigan State Police minimum requirement.

TEST LOCATION: Chrysler Proving Grounds **DATE:** September 21, 2013

Chevrolet Tahoe 5.3L

BEGINNING TIME: 12:38 p.m. **TEMPERATURE:** 64.1° F
WIND VELOCITY: 9 mph **WIND DIRECTION:** 310°

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.0 sec.**	8.25	8.38	8.07	8.17	**8.22**
0 – 80	**14.9 sec.**	13.90	14.19	13.63	14.01	**13.93**
0 – 100	**24.6 sec.**	21.84	22.69	21.12	22.15	**21.95**

DISTANCE TO REACH 110 MPH: .61 mile
DISTANCE TO REACH 120 MPH: .89 mile

TOP SPEED ATTAINED: 139 mph

2014.5 Dodge Charger 2.65 3.6L

BEGINNING TIME: 11:03 a.m. **TEMPERATURE:** 61° F
WIND VELOCITY: 6.3 mph **WIND DIRECTION:** 323°

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.0 sec.**	8.35	8.35	8.46	8.11	**8.32**
0 – 80	**14.9 sec.**	13.25	13.35	13.36	13.25	**13.30**
0 – 100	**24.6 sec.**	20.86	21.42	21.23	21.63	**21.29**

DISTANCE TO REACH 110 MPH: .57 mile
DISTANCE TO REACH 120 MPH: .79 mile

TOP SPEED ATTAINED: 139 mph

Dodge Charger 2.65 5.7L

BEGINNING TIME: 4:09 p.m. **TEMPERATURE:** 65.7° F
WIND VELOCITY: 11.6 mph **WIND DIRECTION:** 314°

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.0 sec.**	6.17	6.33	5.98	6.04	**6.13**
0 – 80	**14.9 sec.**	9.42	9.64	9.26	9.36	**9.42**
0 – 100	**24.6 sec.**	14.49	14.85	14.41	14.48	**14.56**

DISTANCE TO REACH 110 MPH: .34 mile
DISTANCE TO REACH 120 MPH: .45 mile

TOP SPEED ATTAINED: 152 mph

Michigan State Police minimum requirement.

TEST LOCATION: Chrysler Proving Grounds **DATE:** September 21, 2013

Dodge Charger 3.07 3.6L

BEGINNING TIME: 1:15 p.m. **TEMPERATURE:** 64.3° F
WIND VELOCITY: 9 mph **WIND DIRECTION:** 323°

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.0 sec.**	7.84	7.85	7.92	7.79	**7.85**
0 – 80	**14.9 sec.**	12.28	12.62	12.44	12.28	**12.41**
0 – 100	**24.6 sec.**	19.80	20.22	19.76	20.01	**19.95**

DISTANCE TO REACH 110 MPH: .49 mile
DISTANCE TO REACH 120 MPH: .67 mile

TOP SPEED ATTAINED: 141 mph

2014.5 Dodge Charger 2.65 5.7L

BEGINNING TIME: 5:04 p.m. **TEMPERATURE:** 63.3° F
WIND VELOCITY: 6.7 mph **WIND DIRECTION:** 327°

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.0 sec.**	6.30	6.18	5.99	6.01	**6.12**
0 – 80	**14.9 sec.**	9.63	9.50	9.20	9.24	**9.39**
0 – 100	**24.6 sec.**	14.89	14.63	14.33	14.43	**14.57**

DISTANCE TO REACH 110 MPH: .34 mile
DISTANCE TO REACH 120 MPH: .44 mile

TOP SPEED ATTAINED: 150 mph

2014.5 Dodge Charger AWD 3.06 5.7L

BEGINNING TIME: 2:40 p.m. **TEMPERATURE:** 65.2° F
WIND VELOCITY: 8 mph **WIND DIRECTION:** 342°

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.0 sec.**	6.12	6.02	6.00	6.03	**6.04**
0 – 80	**14.9 sec.**	9.91	9.88	9.87	10.01	**9.92**
0 – 100	**24.6 sec.**	14.65	14.64	14.62	14.90	**14.70**

DISTANCE TO REACH 110 MPH: .36 mile
DISTANCE TO REACH 120 MPH: .50 mile

TOP SPEED ATTAINED: 148 mph

Michigan State Police minimum requirement.

TEST LOCATION: Chrysler Proving Grounds **DATE:** September 21, 2013

Ford PI Sedan FWD 3.5L

BEGINNING TIME: 9:47 a.m. **TEMPERATURE:** 59.9° F
WIND VELOCITY: 2.5 mph **WIND DIRECTION:** 317°

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.0 sec.**	8.07	7.95	8.06	7.94	**8.00**
0 – 80	**14.9 sec.**	13.19	13.05	13.11	12.97	**13.08**
0 – 100	**24.6 sec.**	20.71	20.17	20.28	20.37	**20.38**

DISTANCE TO REACH 110 MPH: .53 mile
DISTANCE TO REACH 120 MPH: .96 mile

TOP SPEED ATTAINED: 131 mph

Ford PI Sedan AWD 3.7L

BEGINNING TIME: 11:40 a.m. **TEMPERATURE:** 62.7° F
WIND VELOCITY: 9.7 mph **WIND DIRECTION:** 328°

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.0 sec.**	7.48	7.50	7.55	7.40	**7.48**
0 – 80	**14.9 sec.**	11.96	12.10	12.02	12.12	**12.05**
0 – 100	**24.6 sec.**	18.28	18.88	18.44	18.97	**18.64**

DISTANCE TO REACH 110 MPH: .53 mile
DISTANCE TO REACH 120 MPH: .85 mile

TOP SPEED ATTAINED: 132 mph

Ford PI Sedan AWD Ecoboost 3.5L

BEGINNING TIME: 5:27 p.m. **TEMPERATURE:** 62.6° F
WIND VELOCITY: 7 mph **WIND DIRECTION:** 339°

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.0 sec.**	5.77	5.71	5.73	5.63	**5.71**
0 – 80	**14.9 sec.**	9.14	9.07	9.03	8.96	**9.05**
0 – 100	**24.6 sec.**	13.77	13.85	13.57	13.68	**13.72**

DISTANCE TO REACH 110 MPH: .33 mile
DISTANCE TO REACH 120 MPH: .48 mile

TOP SPEED ATTAINED: 149 mph

Michigan State Police minimum requirement.

TEST LOCATION: Chrysler Proving Grounds **DATE:** September 21, 2013

Ford PI Utility AWD 3.7L

BEGINNING TIME: 1:39 p.m. **TEMPERATURE:** 65.9° F
WIND VELOCITY: 9.2 mph **WIND DIRECTION:** 320°

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.0 sec.**	8.12	8.09	7.86	7.99	**8.02**
0 – 80	**14.9 sec.**	13.10	13.01	12.64	12.93	**12.92**
0 – 100	**24.6 sec.**	21.05	21.30	20.29	21.36	**21.00**

DISTANCE TO REACH 110 MPH: .64 mile
DISTANCE TO REACH 120 MPH: 1.12 mile

TOP SPEED ATTAINED: 131 mph

2014.5 Ford PI Sedan AWD Ecoboost 3.5L

BEGINNING TIME: 4:28 p.m. **TEMPERATURE:** 63.9° F
WIND VELOCITY: 9.1 mph **WIND DIRECTION:** 335°

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.0 sec.**	5.73	5.72	5.59	5.59	**5.66**
0 – 80	**14.9 sec.**	8.96	9.03	8.87	8.82	**8.92**
0 – 100	**24.6 sec.**	13.52	13.73	13.34	13.41	**13.50**

DISTANCE TO REACH 110 MPH: .32 mile
DISTANCE TO REACH 120 MPH: .46 mile

TOP SPEED ATTAINED: 132 mph

2014.5 Ford PI Utility AWD Ecoboost 3.5L

BEGINNING TIME: 3:14 p.m. **TEMPERATURE:** 66.2° F
WIND VELOCITY: 9.7 mph **WIND DIRECTION:** 334°

SPEEDS	TIME REQUIREMENTS*	RUN#1	RUN#2	RUN#3	RUN#4	AVERAGE
0 – 60	**9.0 sec.**	6.24	6.42	6.22	6.23	**6.28**
0 – 80	**14.9 sec.**	10.01	10.31	9.96	10.06	**10.09**
0 – 100	**24.6 sec.**	15.33	15.90	15.22	15.60	**15.51**

DISTANCE TO REACH 110 MPH: .39 mile
DISTANCE TO REACH 120 MPH: .59 mile

TOP SPEED ATTAINED: 131 mph

Michigan State Police minimum requirement.

SUMMARY OF ACCELERATION AND TOP SPEED

CHEVROLET VEHICLES

	Chevrolet Caprice 3.6L	Chevrolet Caprice 6.0L	Chevrolet Impala 3.6L	Chevrolet Tahoe 5.3L
ACCELERATION				
0 – 20 mph (seconds)	1.78	1.57	1.98	2.00
0 – 30 mph (seconds)	2.86	2.45	3.15	3.18
0 – 40 mph (seconds)	3.99	3.51	4.33	4.59
0 – 50 mph (seconds)	5.75	4.72	5.89	6.33
0 – 60 mph (seconds)	7.45	6.01	7.67	8.22
0 – 70 mph (seconds)	9.26	7.76	9.61	10.86
0 – 80 mph (seconds)	12.01	9.70	12.54	13.93
0 – 90 mph (seconds)	15.07	11.80	15.78	17.38
0 – 100 mph (seconds)	18.31	14.35	19.40	21.95
TOP SPEED (mph)	148	155	149	139
DISTANCE TO REACH				
110 mph (miles)	.44	.35	.48	.61
120 mph (miles)	.69	.48	.74	.89
QUARTER MILE				
Time (seconds)	15.71	14.52	15.98	16.47
Speed (mph)	92.17	100.68	90.70	87.68

SUMMARY OF ACCELERATION AND TOP SPEED

DODGE VEHICLES

	2014.5 Dodge Charger 2.65 3.6L	Dodge Charger 2.65 5.7L	Dodge Charger 3.07 3.6L	2014.5 Dodge Charger 2.65 5.7L	2014.5 Dodge Charger AWD 3.06 5.7L
ACCELERATION					
0 – 20 mph (seconds)	1.93	1.58	1.85	1.57	1.54
0 – 30 mph (seconds)	3.38	2.52	3.11	2.53	2.42
0 – 40 mph (seconds)	4.81	3.48	4.36	3.45	3.39
0 – 50 mph (seconds)	6.26	4.69	5.88	4.66	4.71
0 – 60 mph (seconds)	8.32	6.13	7.85	6.12	6.04
0 – 70 mph (seconds)	10.72	7.60	9.92	7.61	7.74
0 – 80 mph (seconds)	13.30	9.42	12.41	9.39	9.92
0 – 90 mph (seconds)	16.10	11.96	16.06	11.98	12.20
0 – 100 mph (seconds)	21.29	14.56	19.95	14.57	14.70
TOP SPEED (mph)	139	152	141	150	148
DISTANCE TO REACH					
110 mph (miles)	.57	.34	.49	.34	.36
120 mph (miles)	.79	.45	.67	.44	.50
QUARTER MILE					
Time (seconds)	16.38	14.53	16.00	14.53	14.60
Speed (mph)	90.31	99.85	89.91	99.88	99.58

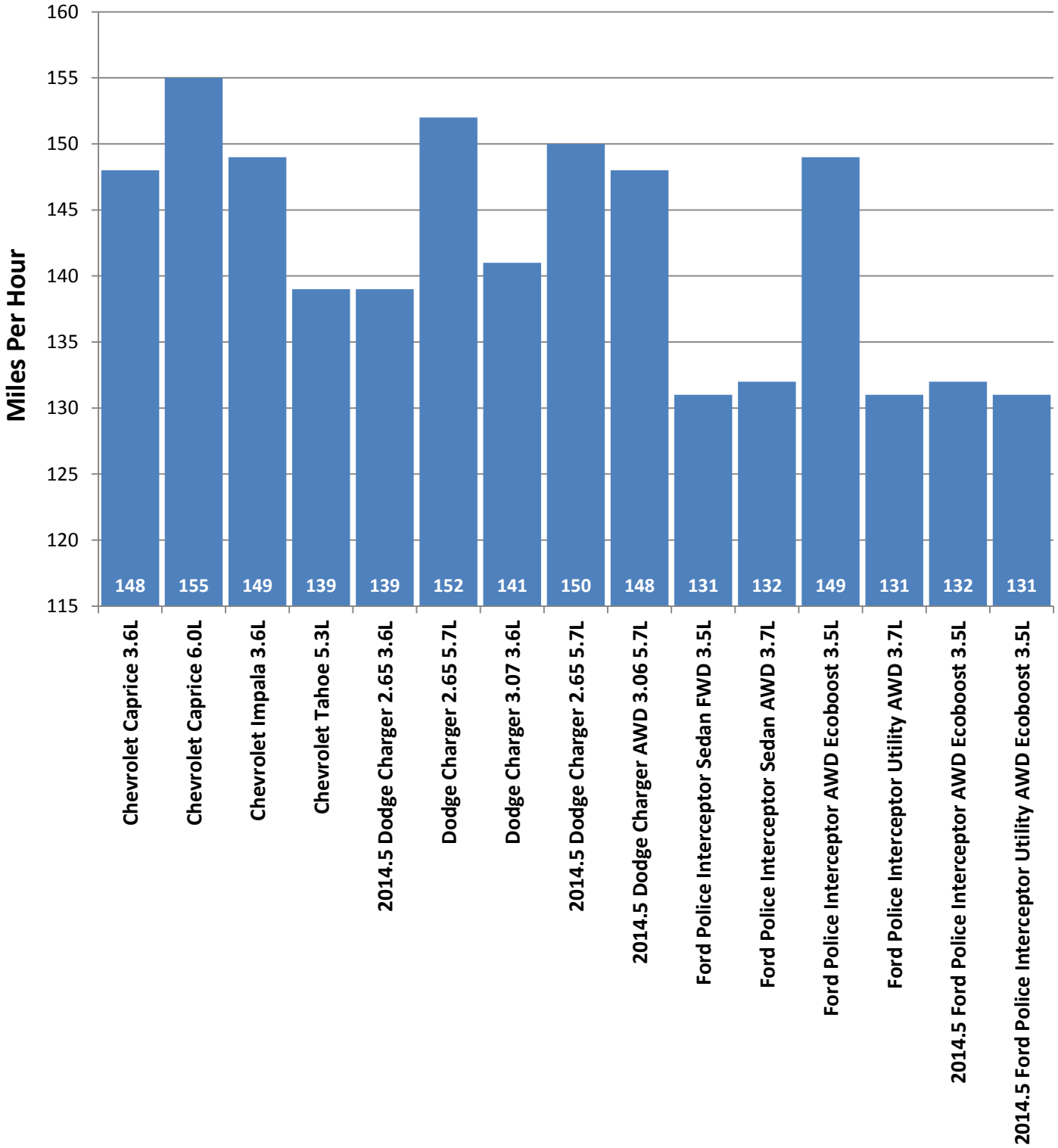
SUMMARY OF ACCELERATION AND TOP SPEED

FORD VEHICLES

	Ford PI Sedan FWD 3.5L	Ford PI Sedan AWD 3.7L	Ford PI Sedan Ecoboost AWD 3.5L	Ford PI Utility AWD 3.7L	2014.5 Ford PI Sedan Ecoboost AWD 3.5	2014.5 Ford PI Utility Ecoboost AWD 3.5L
ACCELERATION						
0 – 20 mph (seconds)	2.03	1.81	1.49	1.84	1.49	1.61
0 – 30 mph (seconds)	3.14	2.81	2.23	2.91	2.23	2.43
0 – 40 mph (seconds)	4.48	4.14	3.16	4.28	3.13	3.42
0 – 50 mph (seconds)	6.02	5.55	4.22	5.86	4.17	4.60
0 – 60 mph (seconds)	8.01	7.48	5.71	8.02	5.66	6.28
0 – 70 mph (seconds)	10.48	9.63	7.33	10.23	7.23	8.05
0 – 80 mph (seconds)	13.08	12.05	9.05	12.92	8.92	10.09
0 – 90 mph (seconds)	16.02	14.92	11.29	16.29	11.10	12.64
0 – 100 mph (seconds)	20.38	18.64	13.72	21.00	13.50	15.51
TOP SPEED (mph)	131	132	149	131	132	131
DISTANCE TO REACH						
110 mph (miles)	.53	.53	.33	.64	.32	.39
120 mph (miles)	.96	.85	.48	1.12	.46	.59
QUARTER MILE						
Time (seconds)	16.22	15.72	14.20	16.10	14.13	14.74
Speed (mph)	90.64	92.28	101.57	89.25	102.27	97.50

2014 Top Speed Comparison

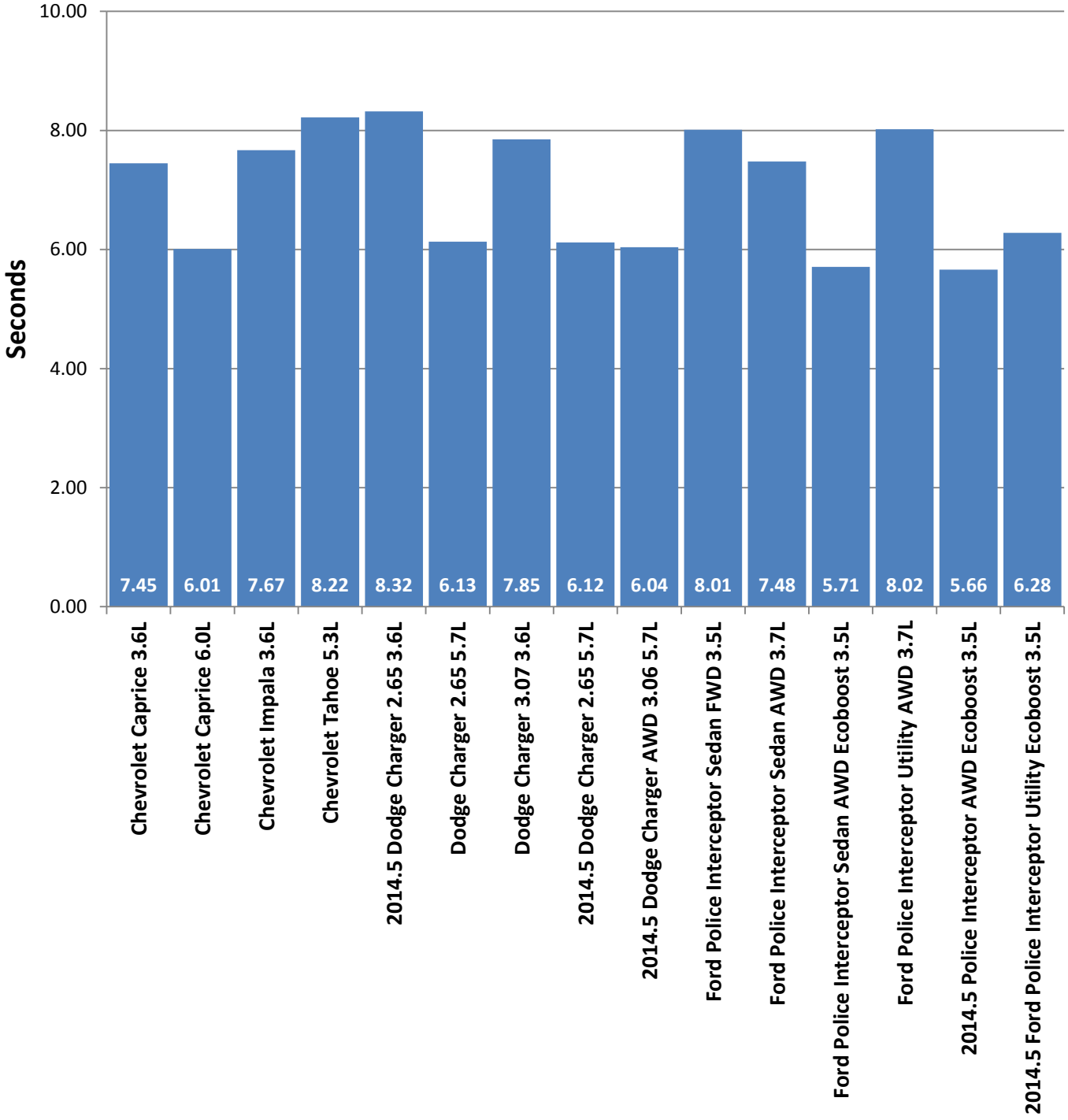
Top Speed Attained



2014 Acceleration Comparison

Acceleration Times

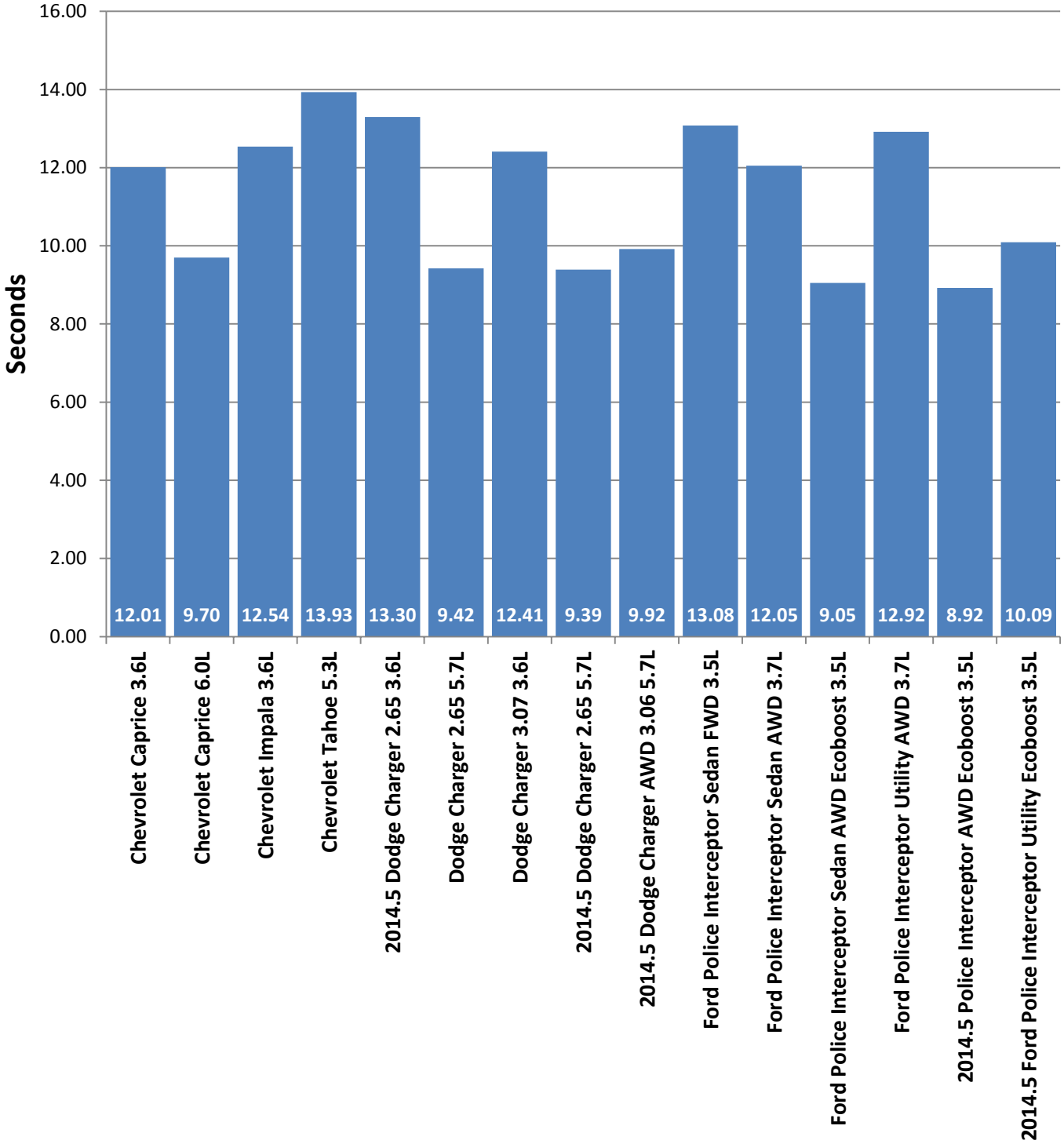
0-60 mph



2014 Acceleration Comparison

Acceleration Times

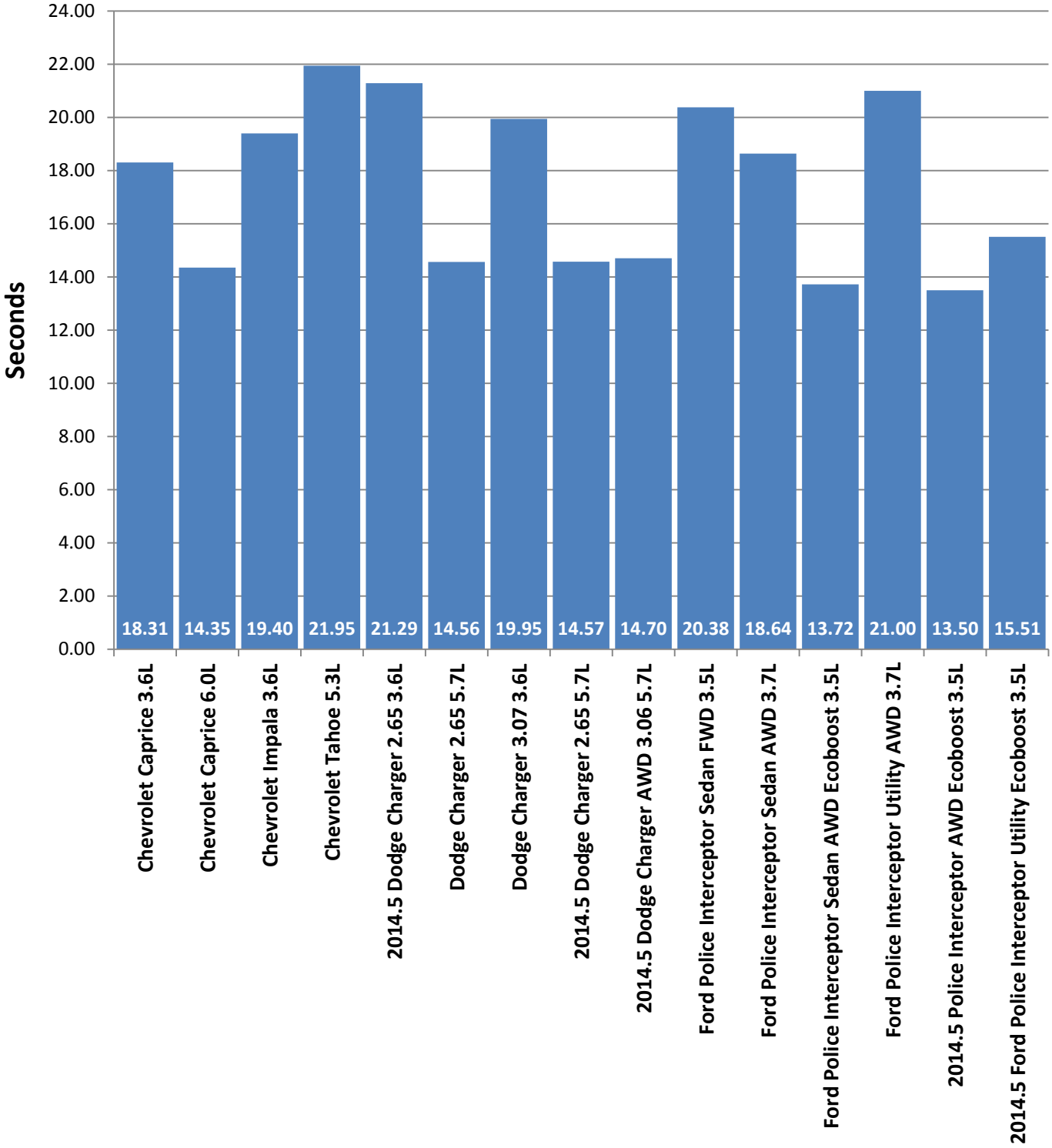
0-80 mph



2014 Acceleration Comparison

Acceleration Times

0-100 mph



BRAKE TESTING

BRAKE TEST OBJECTIVE

To determine the deceleration rate attained by each test vehicle on twenty 60 – 0 mph full ABS stops. Each vehicle is scored on the average deceleration rate it achieves.

BRAKE TEST METHODOLOGY

Each vehicle is taken to the 1.6 mile east/west straightaway and started from the beginning of the straightaway with "cold" brakes. The vehicle then begins its sequence of stops heading in a westerly direction. Within the 1.6 miles, the vehicle is stopped 5 times at pre-determined points on the roadway (.3 miles apart). The vehicle is then turned around and stops an additional 5 times again at pre-determined points on the roadway in an easterly direction. After the 10 stops, the vehicle drives the length of the straightaway (down and back) at 45 mph. This is done in an effort to cool the brakes before the second sequence. After the down and back lap, the 10 stops are repeated.

The data resulting from the twenty stops is used to calculate the average deceleration rate which is the vehicle's score for the test.

DECELERATION RATE FORMULA

$$\text{Deceleration Rate (DR)} = \frac{\text{Initial Velocity*(IV) squared}}{\text{2 times Stopping Distance (SD)}} = \frac{(IV)^2}{2\,(SD)}$$

EXAMPLE:

Initial Velocity = 89.175 ft/s (60.8 mph x 1.4667*)
Stopping Distance = 171.4 ft.

$$DR = \frac{(IV)^2}{2(SD)} = \frac{(89.175)^2}{2(171.4)} = \frac{7952.24}{342.8} = 23.198 \text{ ft/s}^2$$

Once a vehicle's average deceleration rate has been determined, it is possible to calculate the stopping distance from any given speed by utilizing the following formula:

Select a speed; translate that speed into feet per second; square the feet per second figure by multiplying it by itself; divide the resultant figure by 2; divide the remaining figure by the average deceleration rate of the vehicle in question.

EXAMPLE:

60 mph = 88.002 ft/s x 88.002 = 7744.352 / 2 = 3872.176 / 23.198 ft/s^2 = 166.9 ft.

*Initial velocity must be expressed in terms of feet per second, with 1 mile per hour being equal to 1.4667 feet per second.

BRAKE TESTING

Chevrolet Caprice 3.6L

TEST LOCATION: Chrysler Proving Grounds	**DATE:** September 21, 2013
BEGINNING TIME: 10:18 a.m.	**TEMPERATURE:** 59.8° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.01 mph	126.52 feet	30.62 ft/s^2
2	59.65 mph	122.29 feet	31.30 ft/s^2
3	59.60 mph	126.82 feet	30.12 ft/s^2
4	59.69 mph	129.44 feet	29.60 ft/s^2
5	60.90 mph	133.87 feet	29.80 ft/s^2
6	60.16 mph	127.33 feet	30.58 ft/s^2
7	60.01 mph	127.32 feet	30.42 ft/s^2
8	60.09 mph	125.17 feet	31.02 ft/s^2
9	60.34 mph	130.98 feet	29.89 ft/s^2
10	60.42 mph	126.81 feet	30.96 ft/s^2
AVERAGE DECELERATION RATE:			**30.43 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.88 mph	129.82 feet	29.71 ft/s^2
2	59.77 mph	126.82 feet	30.30 ft/s^2
3	60.27 mph	127.71 feet	30.59 ft/s^2
4	60.42 mph	124.00 feet	31.67 ft/s^2
5	60.40 mph	126.71 feet	30.97 ft/s^2
6	60.06 mph	126.76 feet	30.61 ft/s^2
7	60.26 mph	124.95 feet	31.25 ft/s^2
8	59.91 mph	129.58 feet	29.79 ft/s^2
9	59.69 mph	125.73 feet	30.48 ft/s^2
10	60.45 mph	127.32 feet	30.87 ft/s^2
AVERAGE DECELERATION RATE:			**30.62 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**30.53 ft/s^2**
PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**126.8 feet**

Evidence of Severe Fading?	No
Vehicle Stopped in Straight Line?	Yes
Vehicle Stopped Within Correct Lane?	Yes

*****All Vehicles Tested are Equipped with Anti-Lock Brakes*****

BRAKE TESTING

Chevrolet Caprice 6.0L

TEST LOCATION: Chrysler Proving Grounds	**DATE:** September 21, 2013
BEGINNING TIME: 5:04 p.m.	**TEMPERATURE:** 63.6° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.71 mph	124.93 feet	30.70 ft/s^2
2	60.07 mph	125.84 feet	30.84 ft/s^2
3	60.68 mph	131.14 feet	30.20 ft/s^2
4	59.78 mph	127.02 feet	30.26 ft/s^2
5	60.30 mph	127.49 feet	30.68 ft/s^2
6	59.93 mph	130.46 feet	29.61 ft/s^2
7	60.30 mph	129.49 feet	30.20 ft/s^2
8	60.22 mph	128.73 feet	30.30 ft/s^2
9	60.16 mph	130.24 feet	29.89 ft/s^2
10	60.31 mph	129.17 feet	30.28 ft/s^2
AVERAGE DECELERATION RATE:			**30.30 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.71 mph	125.71 feet	30.50 ft/s^2
2	59.29 mph	123.27 feet	30.68 ft/s^2
3	60.11 mph	128.67 feet	30.21 ft/s^2
4	59.67 mph	126.29 feet	30.33 ft/s^2
5	60.31 mph	128.07 feet	30.55 ft/s^2
6	60.65 mph	130.46 feet	30.33 ft/s^2
7	60.44 mph	128.06 feet	30.68 ft/s^2
8	60.33 mph	129.41 feet	30.25 ft/s^2
9	59.85 mph	127.99 feet	30.10 ft/s^2
10	60.08 mph	128.21 feet	30.28 ft/s^2
AVERAGE DECELERATION RATE:			**30.39 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**30.35 ft/s^2**
PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**127.6 feet**

Evidence of Severe Fading?	No
Vehicle Stopped in Straight Line?	Yes
Vehicle Stopped Within Correct Lane?	Yes

*****All Vehicles Tested are Equipped with Anti-Lock Brakes*****

BRAKE TESTING

Chevrolet Impala 3.6L

TEST LOCATION: Chrysler Proving Grounds	**DATE:** September 21, 2013
BEGINNING TIME: 2:33 p.m.	**TEMPERATURE:** 67.1° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.55 mph	133.47 feet	28.58 ft/s^2
2	59.80 mph	132.00 feet	29.14 ft/s^2
3	60.20 mph	135.23 feet	28.82 ft/s^2
4	60.05 mph	137.24 feet	28.26 ft/s^2
5	59.94 mph	131.95 feet	29.28 ft/s^2
6	60.01 mph	134.57 feet	28.79 ft/s^2
7	60.21 mph	134.76 feet	28.93 ft/s^2
8	59.91 mph	134.46 feet	28.71 ft/s^2
9	59.70 mph	133.70 feet	28.67 ft/s^2
10	59.63 mph	131.78 feet	29.02 ft/s^2
AVERAGE DECELERATION RATE:			**28.82 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.15 mph	132.73 feet	29.32 ft/s^2
2	60.16 mph	135.86 feet	28.65 ft/s^2
3	59.61 mph	133.61 feet	28.61 ft/s^2
4	60.33 mph	137.34 feet	28.50 ft/s^2
5	59.49 mph	132.74 feet	28.68 ft/s^2
6	59.75 mph	133.54 feet	28.76 ft/s^2
7	59.80 mph	135.21 feet	28.45 ft/s^2
8	59.72 mph	132.05 feet	29.05 ft/s^2
9	60.13 mph	133.71 feet	29.08 ft/s^2
10	60.00 mph	137.09 feet	28.24 ft/s^2
AVERAGE DECELERATION RATE:			**28.73 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**28.78 ft/s^2**
PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**134.5 feet**

Evidence of Severe Fading?	No
Vehicle Stopped in Straight Line?	Yes
Vehicle Stopped Within Correct Lane?	Yes

*****All Vehicles Tested are Equipped with Anti-Lock Brakes*****

BRAKE TESTING

Chevrolet Tahoe 5.3L

TEST LOCATION: Chrysler Proving Grounds	**DATE:** September 21, 2013
BEGINNING TIME: 3:52 p.m.	**TEMPERATURE:** 65.9° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.66 mph	133.21 feet	28.73 ft/s^2
2	60.13 mph	133.53 feet	29.13 ft/s^2
3	59.63 mph	132.06 feet	28.96 ft/s^2
4	59.84 mph	131.33 feet	29.33 ft/s^2
5	60.42 mph	135.82 feet	28.91 ft/s^2
6	60.10 mph	129.71 feet	29.95 ft/s^2
7	60.20 mph	133.28 feet	29.25 ft/s^2
8	60.28 mph	132.38 feet	29.52 ft/s^2
9	60.31 mph	131.77 feet	29.69 ft/s^2
10	59.75 mph	131.97 feet	29.09 ft/s^2
AVERAGE DECELERATION RATE:			**29.26 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.05 mph	134.95 feet	28.74 ft/s^2
2	59.92 mph	135.47 feet	28.50 ft/s^2
3	60.00 mph	133.00 feet	29.11 ft/s^2
4	59.95 mph	135.02 feet	28.63 ft/s^2
5	59.75 mph	131.60 feet	29.18 ft/s^2
6	59.52 mph	132.65 feet	28.72 ft/s^2
7	60.62 mph	135.40 feet	29.19 ft/s^2
8	60.31 mph	134.91 feet	28.99 ft/s^2
9	60.34 mph	133.70 feet	29.29 ft/s^2
10	60.25 mph	137.27 feet	28.45 ft/s^2
AVERAGE DECELERATION RATE:			**28.88 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**29.07 ft/s^2**
PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**133.2 feet**

Evidence of Severe Fading?	No
Vehicle Stopped in Straight Line?	Yes
Vehicle Stopped Within Correct Lane?	Yes

*****All Vehicles Tested are Equipped with Anti-Lock Brakes*****

BRAKE TESTING

2014.5 Dodge Charger 2.65 3.6L

TEST LOCATION: Chrysler Proving Grounds	**DATE:** September 21, 2013
BEGINNING TIME: 3:00 p.m.	**TEMPERATURE:** 64.2° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.49 mph	128.09 feet	29.72 ft/s^2
2	60.24 mph	126.71 feet	30.80 ft/s^2
3	60.65 mph	136.71 feet	28.94 ft/s^2
4	60.07 mph	127.53 feet	30.44 ft/s^2
5	60.25 mph	129.96 feet	30.04 ft/s^2
6	59.98 mph	127.68 feet	30.30 ft/s^2
7	59.90 mph	127.52 feet	30.26 ft/s^2
8	60.33 mph	129.59 feet	30.21 ft/s^2
9	60.22 mph	127.93 feet	30.48 ft/s^2
10	60.81 mph	133.30 feet	29.83 ft/s^2
AVERAGE DECELERATION RATE:			**30.10 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.03 mph	127.96 feet	30.29 ft/s^2
2	60.50 mph	130.41 feet	30.19 ft/s^2
3	60.20 mph	130.19 feet	29.94 ft/s^2
4	60.38 mph	133.10 feet	29.46 ft/s^2
5	60.16 mph	129.80 feet	29.99 ft/s^2
6	60.19 mph	131.70 feet	29.59 ft/s^2
7	60.56 mph	132.05 feet	29.87 ft/s^2
8	60.24 mph	126.76 feet	30.79 ft/s^2
9	60.22 mph	131.15 feet	29.74 ft/s^2
10	59.60 mph	127.50 feet	29.96 ft/s^2
AVERAGE DECELERATION RATE:			**29.98 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**30.04 ft/s^2**
PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**128.9 feet**

Evidence of Severe Fading?	No
Vehicle Stopped in Straight Line?	Yes
Vehicle Stopped Within Correct Lane?	Yes

All Vehicles Tested are Equipped with Anti-Lock Brakes*

BRAKE TESTING

Dodge Charger 2.65 5.7L

TEST LOCATION: Chrysler Proving Grounds	**DATE:** September 21, 2013
BEGINNING TIME: 10:48 a.m.	**TEMPERATURE:** 60.7° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.45 mph	127.78 feet	29.74 ft/s^2
2	59.87 mph	126.14 feet	30.56 ft/s^2
3	59.71 mph	127.14 feet	30.16 ft/s^2
4	60.09 mph	127.10 feet	30.55 ft/s^2
5	60.38 mph	131.12 feet	29.91 ft/s^2
6	60.32 mph	128.38 feet	30.49 ft/s^2
7	60.37 mph	127.52 feet	30.73 ft/s^2
8	60.36 mph	126.01 feet	31.10 ft/s^2
9	60.34 mph	125.54 feet	31.19 ft/s^2
10	60.17 mph	129.34 feet	30.10 ft/s^2
AVERAGE DECELERATION RATE:			**30.45 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.70 mph	128.78 feet	29.77 ft/s^2
2	60.30 mph	128.11 feet	30.53 ft/s^2
3	60.38 mph	131.02 feet	29.93 ft/s^2
4	61.32 mph	130.35 feet	31.02 ft/s^2
5	60.20 mph	130.05 feet	29.97 ft/s^2
6	60.11 mph	125.34 feet	31.01 ft/s^2
7	59.57 mph	126.95 feet	30.06 ft/s^2
8	59.73 mph	124.06 feet	30.93 ft/s^2
9	60.53 mph	131.56 feet	29.95 ft/s^2
10	60.69 mph	128.18 feet	30.90 ft/s^2
AVERAGE DECELERATION RATE:			**30.41 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**30.43 ft/s^2**
PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**127.2 feet**

Evidence of Severe Fading?	No
Vehicle Stopped in Straight Line?	Yes
Vehicle Stopped Within Correct Lane?	Yes

All Vehicles Tested are Equipped with Anti-Lock Brakes*

BRAKE TESTING

Dodge Charger 3.07 3.6L

TEST LOCATION: Chrysler Proving Grounds	**DATE:** September 21, 2013
BEGINNING TIME: 4:15 p.m.	**TEMPERATURE:** 64.6° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.81 mph	128.19 feet	30.01 ft/s^2
2	60.34 mph	126.85 feet	30.87 ft/s^2
3	60.00 mph	129.57 feet	29.88 ft/s^2
4	59.83 mph	128.98 feet	29.85 ft/s^2
5	59.84 mph	125.51 feet	30.69 ft/s^2
6	60.45 mph	129.37 feet	30.38 ft/s^2
7	59.99 mph	126.59 feet	30.57 ft/s^2
8	60.21 mph	124.67 feet	31.28 ft/s^2
9	60.18 mph	129.48 feet	30.08 ft/s^2
10	59.59 mph	123.12 feet	31.02 ft/s^2
AVERAGE DECELERATION RATE:			**30.46 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.42 mph	127.24 feet	29.85 ft/s^2
2	59.84 mph	125.49 feet	30.69 ft/s^2
3	59.99 mph	130.23 feet	29.72 ft/s^2
4	59.90 mph	128.37 feet	30.06 ft/s^2
5	60.40 mph	132.05 feet	29.72 ft/s^2
6	60.12 mph	126.13 feet	30.82 ft/s^2
7	60.36 mph	128.86 feet	30.41 ft/s^2
8	60.48 mph	127.34 feet	30.90 ft/s^2
9	60.42 mph	128.25 feet	30.61 ft/s^2
10	59.86 mph	128.63 feet	29.96 ft/s^2
AVERAGE DECELERATION RATE:			**30.27 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**30.37 ft/s^2**
PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**127.5 feet**

Evidence of Severe Fading?	No
Vehicle Stopped in Straight Line?	Yes
Vehicle Stopped Within Correct Lane?	Yes

*****All Vehicles Tested are Equipped with Anti-Lock Brakes*****

BRAKE TESTING

2014.5 Dodge Charger 2.65 5.7L

TEST LOCATION: Chrysler Proving Grounds	**DATE:** September 21, 2013
BEGINNING TIME: 1:04 p.m.	**TEMPERATURE:** 63.1° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	58.98 mph	118.78 feet	31.50 ft/s^2
2	60.25 mph	124.79 feet	31.29 ft/s^2
3	59.85 mph	125.40 feet	30.73 ft/s^2
4	59.07 mph	122.63 feet	30.60 ft/s^2
5	60.59 mph	127.04 feet	31.08 ft/s^2
6	59.68 mph	127.01 feet	30.16 ft/s^2
7	59.60 mph	124.05 feet	30.80 ft/s^2
8	59.83 mph	125.04 feet	30.79 ft/s^2
9	60.04 mph	125.47 feet	30.90 ft/s^2
10	60.35 mph	129.69 feet	30.21 ft/s^2
AVERAGE DECELERATION RATE:			**30.81 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.93 mph	126.70 feet	30.49 ft/s^2
2	60.76 mph	128.80 feet	30.83 ft/s^2
3	60.75 mph	134.82 feet	29.44 ft/s^2
4	60.55 mph	131.51 feet	29.98 ft/s^2
5	60.00 mph	127.23 feet	30.43 ft/s^2
6	60.07 mph	127.40 feet	30.47 ft/s^2
7	59.72 mph	123.88 feet	30.96 ft/s^2
8	60.57 mph	128.68 feet	30.66 ft/s^2
9	59.82 mph	127.02 feet	30.30 ft/s^2
10	60.29 mph	127.45 feet	30.67 ft/s^2
AVERAGE DECELERATION RATE:			**30.42 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**30.62 ft/s^2**
PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**126.5 feet**

Evidence of Severe Fading?	No
Vehicle Stopped in Straight Line?	Yes
Vehicle Stopped Within Correct Lane?	Yes

All Vehicles Tested are Equipped with Anti-Lock Brakes*

BRAKE TESTING

2014.5 Dodge Charger AWD 3.06 5.7L

TEST LOCATION: Chrysler Proving Grounds	**DATE:** September 21, 2013
BEGINNING TIME: 9:30 a.m.	**TEMPERATURE:** 58.1° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.47 mph	127.50 feet	29.83 ft/s^2
2	59.43 mph	125.06 feet	30.37 ft/s^2
3	59.77 mph	129.08 feet	29.76 ft/s^2
4	59.84 mph	129.52 feet	29.73 ft/s^2
5	59.28 mph	132.47 feet	28.53 ft/s^2
6	60.23 mph	129.88 feet	30.05 ft/s^2
7	60.46 mph	126.92 feet	30.98 ft/s^2
8	60.06 mph	124.89 feet	31.07 ft/s^2
9	60.58 mph	126.08 feet	31.31 ft/s^2
10	59.99 mph	132.39 feet	29.24 ft/s^2
AVERAGE DECELERATION RATE:			**30.09 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.84 mph	126.80 feet	30.37 ft/s^2
2	60.21 mph	125.90 feet	30.97 ft/s^2
3	60.22 mph	131.04 feet	29.76 ft/s^2
4	59.77 mph	127.52 feet	30.14 ft/s^2
5	60.15 mph	131.33 feet	29.63 ft/s^2
6	59.12 mph	121.68 feet	30.89 ft/s^2
7	60.27 mph	127.50 feet	30.64 ft/s^2
8	59.70 mph	125.96 feet	30.43 ft/s^2
9	59.76 mph	123.53 feet	31.09 ft/s^2
10	60.37 mph	130.05 feet	30.14 ft/s^2
AVERAGE DECELERATION RATE:			**30.41 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**30.25 ft/s^2**
PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**128.0 feet**

Evidence of Severe Fading?	No
Vehicle Stopped in Straight Line?	Yes
Vehicle Stopped Within Correct Lane?	Yes

All Vehicles Tested are Equipped with Anti-Lock Brakes*

BRAKE TESTING

Ford Police Interceptor Sedan FWD 3.5L

TEST LOCATION: Chrysler Proving Grounds	**DATE:** September 21, 2013
BEGINNING TIME: 2:09 p.m.	**TEMPERATURE:** 66.6° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.91 mph	134.23 feet	28.76 ft/s^2
2	60.78 mph	138.82 feet	28.62 ft/s^2
3	59.89 mph	138.00 feet	27.95 ft/s^2
4	60.30 mph	136.01 feet	28.75 ft/s^2
5	60.12 mph	138.44 feet	28.08 ft/s^2
6	59.60 mph	130.45 feet	29.29 ft/s^2
7	60.08 mph	135.60 feet	28.63 ft/s^2
8	60.87 mph	138.04 feet	28.87 ft/s^2
9	60.11 mph	135.44 feet	28.70 ft/s^2
10	60.20 mph	130.87 feet	29.79 ft/s^2
AVERAGE DECELERATION RATE:			**28.74 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.06 mph	133.75 feet	29.01 ft/s^2
2	60.50 mph	134.38 feet	29.29 ft/s^2
3	60.20 mph	135.52 feet	28.76 ft/s^2
4	59.42 mph	133.94 feet	28.35 ft/s^2
5	60.28 mph	134.99 feet	28.95 ft/s^2
6	59.74 mph	132.25 feet	29.03 ft/s^2
7	60.48 mph	134.89 feet	29.17 ft/s^2
8	60.18 mph	132.95 feet	29.30 ft/s^2
9	60.08 mph	128.83 feet	30.14 ft/s^2
10	60.13 mph	137.54 feet	28.27 ft/s^2
AVERAGE DECELERATION RATE:			**29.03 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**28.89 ft/s^2**
PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**134.0 feet**

Evidence of Severe Fading?	No
Vehicle Stopped in Straight Line?	Yes
Vehicle Stopped Within Correct Lane?	Yes

*****All Vehicles Tested are Equipped with Anti-Lock Brakes*****

BRAKE TESTING

Ford Police Interceptor Sedan AWD 3.7L

TEST LOCATION: Chrysler Proving Grounds	**DATE:** September 21, 2013
BEGINNING TIME: 3:28 p.m.	**TEMPERATURE:** 65° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.21 mph	142.40 feet	27.38 ft/s^2
2	60.19 mph	141.44 feet	27.55 ft/s^2
3	60.16 mph	139.51 feet	27.90 ft/s^2
4	59.79 mph	139.41 feet	27.58 ft/s^2
5	60.15 mph	134.86 feet	28.85 ft/s^2
6	59.93 mph	136.37 feet	28.33 ft/s^2
7	61.00 mph	139.62 feet	28.67 ft/s^2
8	60.11 mph	136.06 feet	28.57 ft/s^2
9	59.61 mph	138.25 feet	27.64 ft/s^2
10	60.35 mph	137.32 feet	28.52 ft/s^2
AVERAGE DECELERATION RATE:			**28.10 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.13 mph	134.11 feet	29.00 ft/s^2
2	60.56 mph	137.70 feet	28.65 ft/s^2
3	60.00 mph	138.25 feet	28.01 ft/s^2
4	59.56 mph	137.49 feet	27.75 ft/s^2
5	60.23 mph	135.14 feet	28.87 ft/s^2
6	59.96 mph	134.09 feet	28.84 ft/s^2
7	59.91 mph	134.56 feet	28.69 ft/s^2
8	59.99 mph	134.61 feet	28.75 ft/s^2
9	60.13 mph	132.40 feet	29.37 ft/s^2
10	60.12 mph	140.63 feet	27.64 ft/s^2
AVERAGE DECELERATION RATE:			**28.56 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**28.83 ft/s^2**
PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**136.7 feet**

Evidence of Severe Fading?	No
Vehicle Stopped in Straight Line?	Yes
Vehicle Stopped Within Correct Lane?	Yes

All Vehicles Tested are Equipped with Anti-Lock Brakes*

BRAKE TESTING

Ford Police Interceptor Sedan AWD Ecoboost 3.5L

TEST LOCATION: Chrysler Proving Grounds	**DATE:** September 21, 2013
BEGINNING TIME: 1:46 p.m.	**TEMPERATURE:** 64.2° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.94 mph	137.21 feet	28.16 ft/s^2
2	59.75 mph	133.78 feet	28.70 ft/s^2
3	60.08 mph	136.72 feet	28.40 ft/s^2
4	60.35 mph	142.48 feet	27.50 ft/s^2
5	59.70 mph	138.84 feet	27.61 ft/s^2
6	60.03 mph	133.34 feet	29.07 ft/s^2
7	59.72 mph	136.85 feet	28.03 ft/s^2
8	60.13 mph	130.26 feet	29.85 ft/s^2
9	60.29 mph	136.56 feet	28.63 ft/s^2
10	60.00 mph	137.99 feet	28.06 ft/s^2
AVERAGE DECELERATION RATE:			**28.40 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.35 mph	137.47 feet	28.49 ft/s^2
2	59.78 mph	133.18 feet	28.86 ft/s^2
3	60.28 mph	138.79 feet	28.16 ft/s^2
4	60.56 mph	144.26 feet	27.34 ft/s^2
5	59.98 mph	137.25 feet	28.19 ft/s^2
6	59.91 mph	133.19 feet	28.99 ft/s^2
7	59.80 mph	130.12 feet	29.56 ft/s^2
8	60.36 mph	132.05 feet	29.68 ft/s^2
9	59.55 mph	130.26 feet	29.28 ft/s^2
10	59.73 mph	139.27 feet	27.55 ft/s^2
AVERAGE DECELERATION RATE:			**28.61 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**28.51 ft/s^2**
PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**135.8 feet**

Evidence of Severe Fading?	No
Vehicle Stopped in Straight Line?	Yes
Vehicle Stopped Within Correct Lane?	Yes

All Vehicles Tested are Equipped with Anti-Lock Brakes*

BRAKE TESTING

Ford Police Interceptor Utility AWD 3.7L

TEST LOCATION: Chrysler Proving Grounds	**DATE:** September 21, 2013
BEGINNING TIME: 4:38 p.m.	**TEMPERATURE:** 65.2° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.28 mph	136.69 feet	28.59 ft/s^2
2	60.02 mph	134.58 feet	28.79 ft/s^2
3	59.62 mph	136.99 feet	27.91 ft/s^2
4	60.14 mph	139.53 feet	27.88 ft/s^2
5	60.07 mph	133.53 feet	29.06 ft/s^2
6	59.75 mph	130.81 feet	29.36 ft/s^2
7	60.11 mph	134.31 feet	28.93 ft/s^2
8	60.42 mph	131.75 feet	29.80 ft/s^2
9	60.11 mph	140.32 feet	27.70 ft/s^2
10	59.71 mph	129.99 feet	29.50 ft/s^2
AVERAGE DECELERATION RATE:			**28.75 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.74 mph	131.12 feet	29.27 ft/s^2
2	60.33 mph	132.54 feet	29.53 ft/s^2
3	59.96 mph	134.86 feet	28.68 ft/s^2
4	59.90 mph	135.68 feet	28.44 ft/s^2
5	60.38 mph	137.97 feet	28.42 ft/s^2
6	60.41 mph	135.96 feet	28.87 ft/s^2
7	60.25 mph	134.67 feet	28.99 ft/s^2
8	60.25 mph	129.95 feet	30.05 ft/s^2
9	59.91 mph	130.78 feet	29.52 ft/s^2
10	59.89 mph	138.96 feet	27.76 ft/s^2
AVERAGE DECELERATION RATE:			**28.95 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**28.85 ft/s^2**
PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**134.2 feet**

Evidence of Severe Fading?	No
Vehicle Stopped in Straight Line?	Yes
Vehicle Stopped Within Correct Lane?	Yes

All Vehicles Tested are Equipped with Anti-Lock Brakes*

BRAKE TESTING

2014.5 Ford Police Interceptor AWD 3.5L

TEST LOCATION: Chrysler Proving Grounds	**DATE:** September 21, 2013
BEGINNING TIME: 11:30 a.m.	**TEMPERATURE:** 62.9° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.71 mph	132.93 feet	28.85 ft/s^2
2	60.31 mph	135.72 feet	28.82 ft/s^2
3	59.40 mph	135.86 feet	27.93 ft/s^2
4	60.61 mph	136.23 feet	29.01 ft/s^2
5	59.86 mph	130.73 feet	29.48 ft/s^2
6	59.87 mph	135.87 feet	28.37 ft/s^2
7	61.17 mph	139.14 feet	28.92 ft/s^2
8	60.09 mph	131.20 feet	29.60 ft/s^2
9	60.13 mph	138.68 feet	28.04 ft/s^2
10	59.91 mph	131.59 feet	29.33 ft/s^2
AVERAGE DECELERATION RATE:			**28.84 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.26 mph	134.80 feet	28.98 ft/s^2
2	59.77 mph	131.41 feet	29.24 ft/s^2
3	59.76 mph	134.11 feet	28.64 ft/s^2
4	60.00 mph	135.03 feet	28.68 ft/s^2
5	59.78 mph	131.41 feet	29.25 ft/s^2
6	59.86 mph	132.92 feet	29.00 ft/s^2
7	60.36 mph	132.84 feet	29.50 ft/s^2
8	59.57 mph	130.59 feet	29.23 ft/s^2
9	60.30 mph	129.99 feet	30.09 ft/s^2
10	60.42 mph	136.29 feet	28.81 ft/s^2
AVERAGE DECELERATION RATE:			**29.14 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**28.99 ft/s^2**
PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**133.6 feet**

Evidence of Severe Fading?	No
Vehicle Stopped in Straight Line?	Yes
Vehicle Stopped Within Correct Lane?	Yes

All Vehicles Tested are Equipped with Anti-Lock Brakes*

BRAKE TESTING

2014.5 Ford Police Interceptor Utility AWD Ecoboost 3.5L

TEST LOCATION: Chrysler Proving Grounds	**DATE:** September 21, 2013
BEGINNING TIME: 9:55 a.m.	**TEMPERATURE:** 59.5° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.02 mph	136.03 feet	28.48 ft/s^2
2	59.00 mph	131.82 feet	28.41 ft/s^2
3	59.45 mph	135.42 feet	28.07 ft/s^2
4	60.70 mph	140.82 feet	28.14 ft/s^2
5	59.79 mph	135.19 feet	28.44 ft/s^2
6	60.60 mph	134.60 feet	29.34 ft/s^2
7	60.34 mph	138.21 feet	28.33 ft/s^2
8	59.97 mph	131.72 feet	29.37 ft/s^2
9	59.49 mph	130.74 feet	29.11 ft/s^2
10	59.84 mph	142.08 feet	27.11 ft/s^2
AVERAGE DECELERATION RATE:			**28.48 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.90 mph	135.45 feet	28.49 ft/s^2
2	60.10 mph	133.45 feet	29.11 ft/s^2
3	60.72 mph	144.94 feet	27.36 ft/s^2
4	60.20 mph	133.69 feet	29.16 ft/s^2
5	60.08 mph	132.32 feet	29.34 ft/s^2
6	59.87 mph	134.44 feet	28.67 ft/s^2
7	60.80 mph	134.28 feet	29.61 ft/s^2
8	60.55 mph	134.01 feet	29.43 ft/s^2
9	60.25 mph	131.84 feet	29.61 ft/s^2
10	59.68 mph	134.17 feet	28.55 ft/s^2
AVERAGE DECELERATION RATE:			**28.93ft/s^2**

Phase III

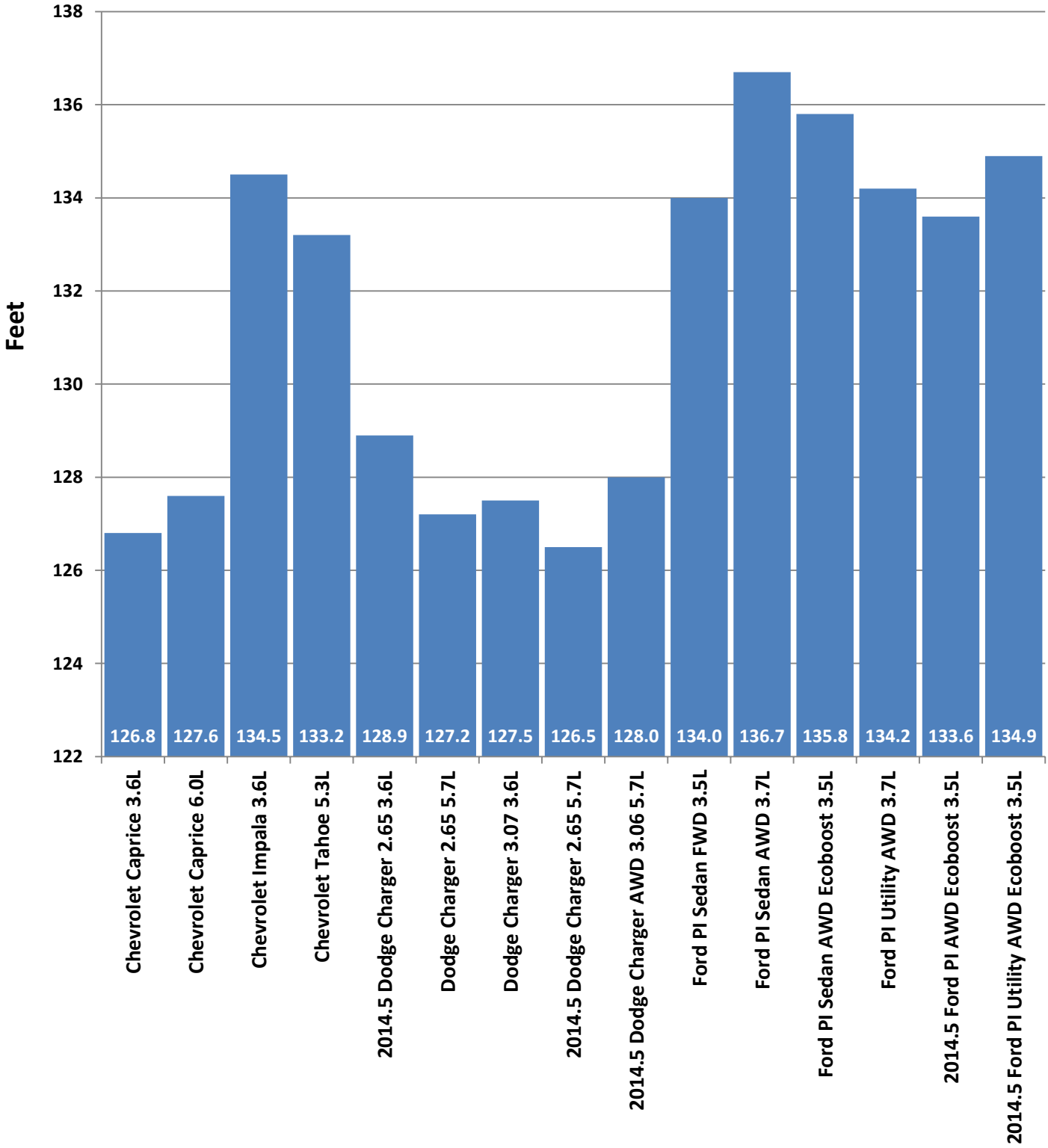
OVERALL AVERAGE DECELERATION RATE:	**28.71 ft/s^2**
PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**134.9 feet**

Evidence of Severe Fading?	No
Vehicle Stopped in Straight Line?	Yes
Vehicle Stopped Within Correct Lane?	Yes

All Vehicles Tested are Equipped with Anti-Lock Brakes*

2014 Brake Testing

Projected Stopping Distance



ERGONOMICS AND COMMUNICATIONS

TEST OBJECTIVE

Rate each test vehicle's ability to:

1. Provide a suitable environment for the patrol officer in the performance of his/her assigned tasks.

2. Accommodate the required communications and emergency warning equipment and assess the relative difficulty of such installations.

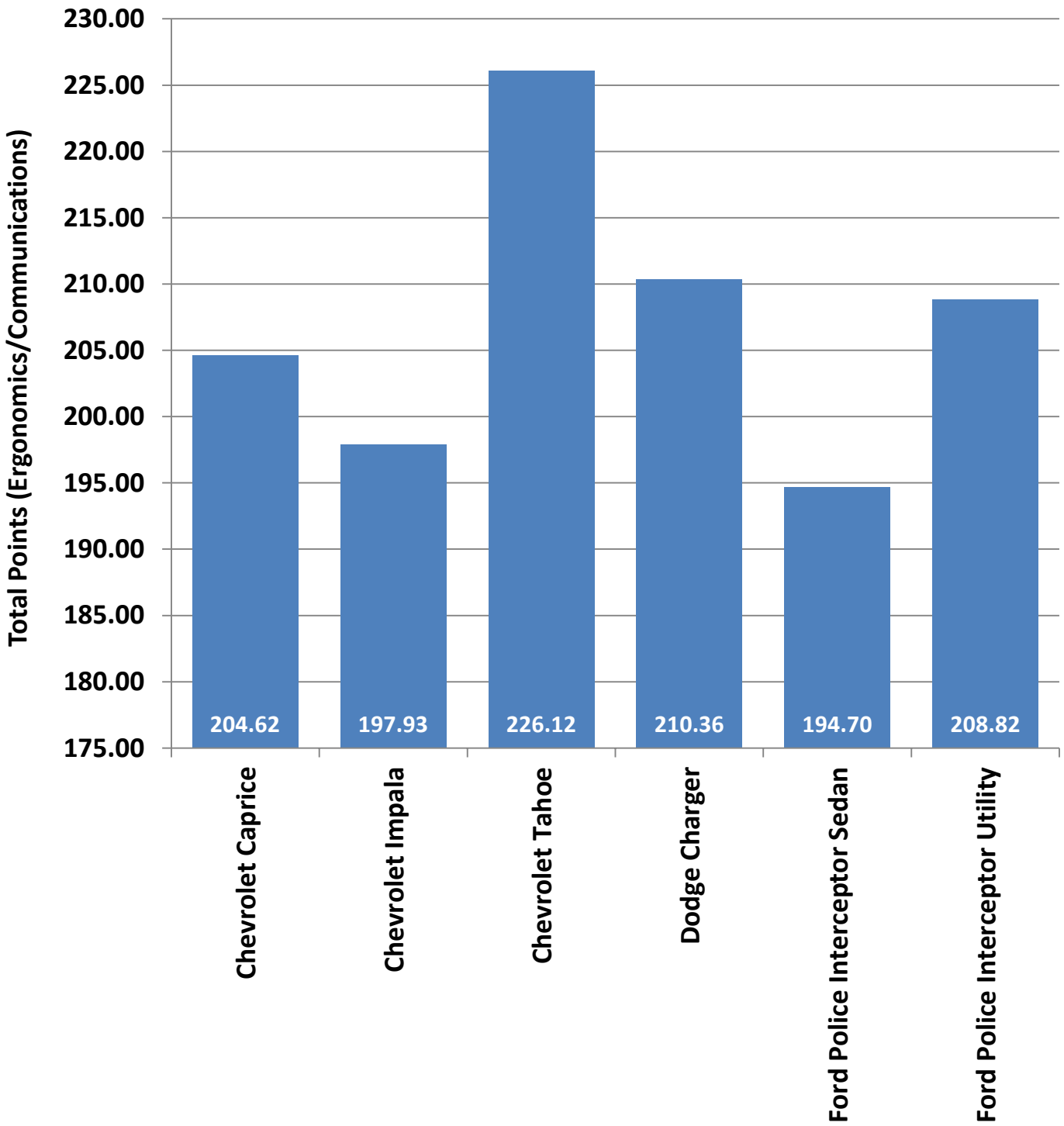
TEST METHODOLOGY

Utilizing the ergonomics portion of the form, a minimum of four officers (in this case 10) individually and independently compare and score each test vehicle on the various comfort, instrumentation, and visibility items. The installation and communications portion of the evaluation is conducted by personnel from DIT Communications, based upon the relative difficulty of the necessary installations. Each factor is graded on a 1 to 10 scale, with 1 representing "totally unacceptable," 5 representing "average," and 10 representing "superior." The scores are averaged to minimize personal prejudice for or against any given vehicle.

ERGONOMICS AND COMMUNICATIONS

	Chevrolet Caprice	Chevrolet Impala	Chevrolet Tahoe	Dodge Charger	Ford Police Interceptor	Ford Police Interceptor Utility
FRONT SEAT						
Padding	7.50	8.00	8.10	7.50	7.40	7.70
Depth of Bucket Seat	7.60	6.90	7.70	7.50	6.80	6.70
Adjustability – Front to Rear	6.00	7.40	7.90	8.20	7.70	7.60
Upholstery	7.60	7.00	7.90	7.50	7.60	7.70
Bucket Seat Design	7.70	6.70	7.60	7.30	6.80	6.80
Headroom	6.90	7.00	9.00	7.50	7.40	8.90
Seatbelts	6.60	7.30	8.40	7.80	7.80	8.20
Ease of Entry and Exit	7.70	7.00	8.80	7.60	6.20	8.50
Overall Comfort Rating	7.50	7.00	8.50	7.70	7.30	8.10
REAR SEAT						
Leg room – Front seat back	7.60	4.50	8.30	5.60	5.10	6.90
Ease of Entry and Exit	7.10	4.90	8.30	5.40	4.60	7.30
INSTRUMENTATION						
Clarity	7.50	7.90	8.00	7.70	7.20	7.00
Placement	7.30	8.00	8.10	7.90	7.20	7.40
VEHICLE CONTROLS						
Pedals, Size, and Position	7.50	6.90	8.40	7.70	6.60	7.30
Power Window Switch	7.30	7.40	7.70	8.90	7.50	7.50
Inside Door Lock Switch	7.00	6.80	7.90	7.90	7.30	7.40
Automatic Door Lock Switch	6.50	6.00	7.90	7.90	6.10	6.20
Outside Mirror Controls	7.00	6.70	8.10	7.90	7.70	7.80
Steering Wheel, Size, Tilt Release, and Surface	7.50	7.00	7.50	8.00	7.30	7.50
Heat/AC Vent Placement and Adjustability	7.50	7.50	7.60	8.00	6.90	7.20
VISIBILITY						
Front (Windshield)	8.00	8.10	8.80	7.60	7.50	8.40
Rear (Back Window)	7.10	7.00	7.20	6.40	5.20	6.10
Left Rear Quarter	7.00	7.10	6.90	6.30	6.60	6.90
Right Rear Quarter	7.20	6.90	6.80	6.30	6.00	6.80
Outside Rear View Mirrors	6.10	5.70	9.00	7.00	7.50	7.80
COMMUNICATIONS						
Dashboard Accessibility	8.00	8.75	8.82	8.64	8.18	8.14
Trunk Accessibility	7.65	8.40	8.40	8.45	7.80	7.65
Engine Compartment	8.67	8.08	8.50	8.17	7.42	7.33
TOTAL SCORES	**204.62**	**197.93**	**226.12**	**210.36**	**194.70**	**208.82**

2014 Ergonomics/Communications
Vehicle Scores



FUEL ECONOMY

TEST OBJECTIVE

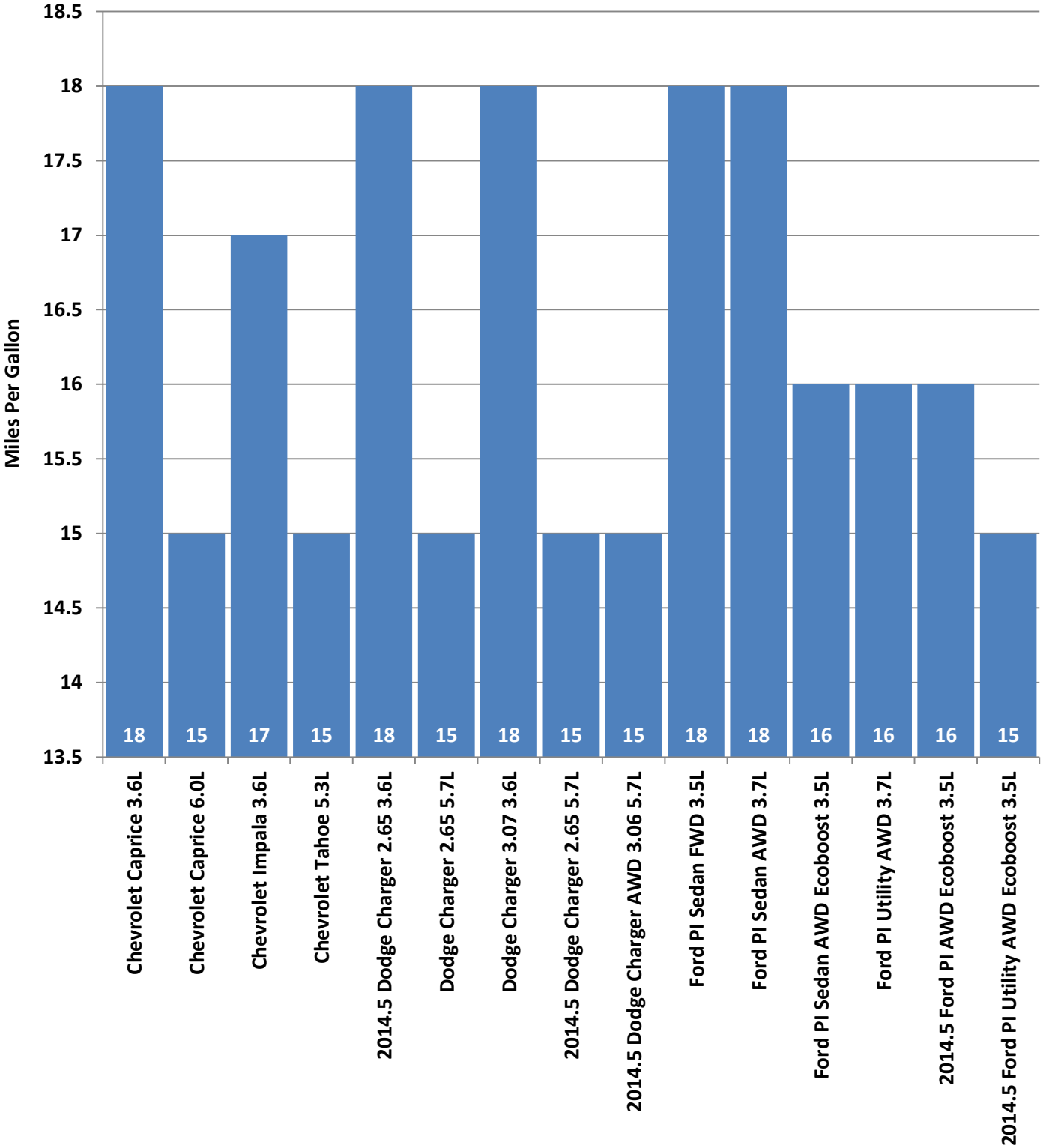
To determine the fuel economy potential of all vehicles being evaluated. The data used for scoring are both valid and reliable in a comparison sense, while not necessarily being an accurate predictor of actual fuel economy in police patrol service.

TEST METHODOLOGY

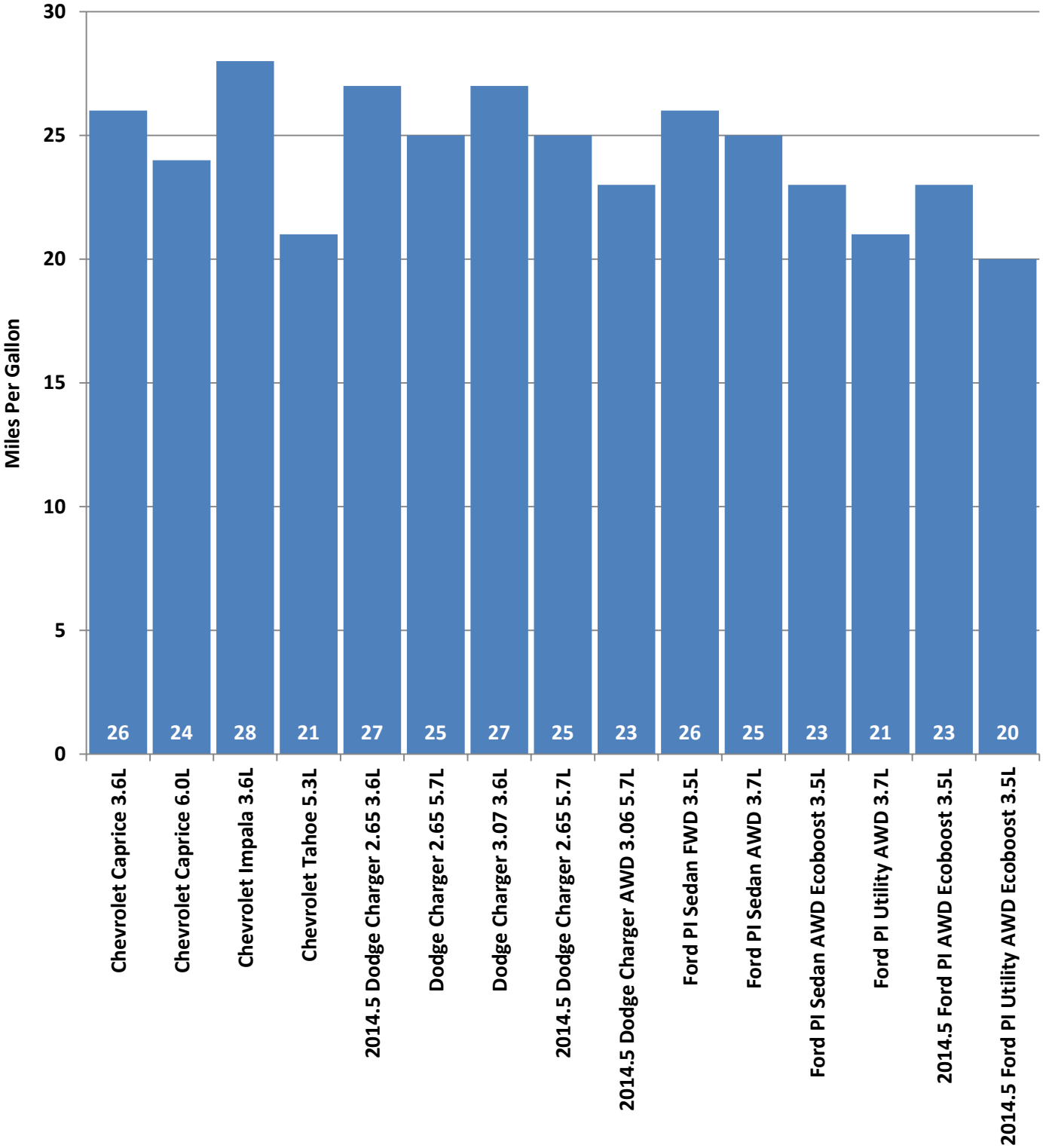
The vehicles will be scored based on estimates for city fuel economy to the nearest 1/10th mile per gallon (mpg) developed from data supplied by the vehicle manufacturer and certified by the Environmental Protection Agency.

Vehicles Make/Model/Engine	E.P.A. Miles Per Gallon		
	City Label	Highway Label	Combined Label
Chevrolet Caprice 3.6L	18	26	21
Chevrolet Caprice 6.0L	15	24	18
Chevrolet Impala 3.6L	17	28	21
Chevrolet Tahoe 5.3L	15	21	17
2014.5 Dodge Charger 2.65 3.6L	18	27	21
Dodge Charger 2.65 5.7L	15	25	18
Dodge Charger 3.07 3.6L	18	27	21
2014.5 Dodge Charger 2.65 5.7L	15	25	18
2014.5 Dodge Charger AWD 3.06 5.7L	15	23	18
Ford PI Sedan FWD 3.5L	18	26	21
Ford PI Sedan AWD 3.7L	18	25	21
Ford PI Sedan AWD Ecoboost 3.5L	16	23	18
Ford PI Utility AWD 3.7L	16	21	18
2014.5 Ford PI AWD Ecoboost 3.5L	16	23	18
2014.5 Ford PI Utility AWD Ecoboost 3.5L	15	20	17

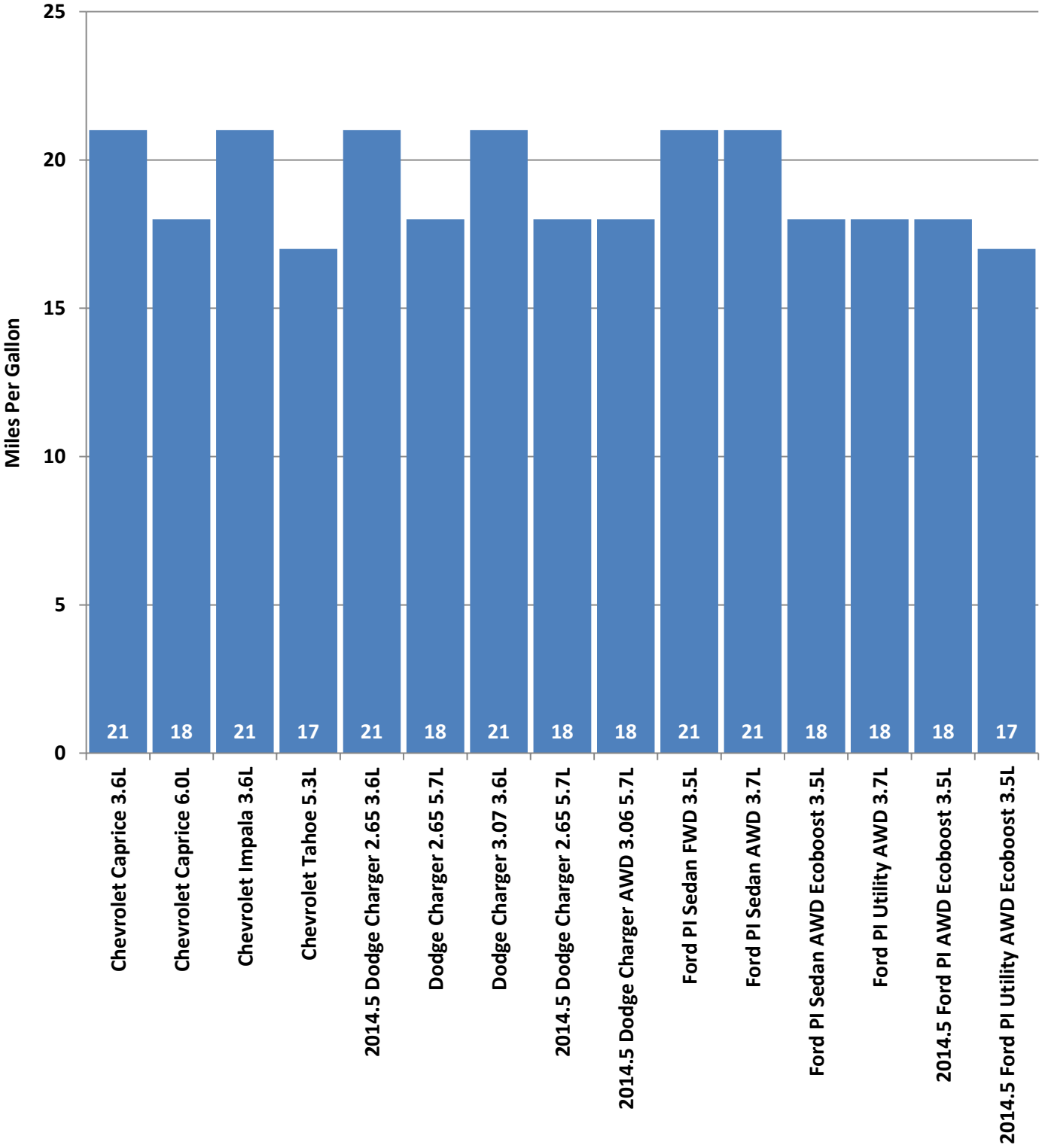
2014 FUEL ECONOMY COMPARISON
"CITY" EPA ESTIMATES



2014 FUEL ECONOMY COMPARISON
"HIGHWAY" EPA ESTIMATES



2014 FUEL ECONOMY COMPARISON
"COMBINED" EPA ESTIMATES



MICHIGAN STATE POLICE
SCORING AND BID ADJUSTMENT METHODOLOGY*

STEP I: RAW SORES

Raw scores are developed, through testing, for each vehicle in each of six evaluation categories. The raw scores are expressed in terms of seconds, feet per second^2, miles-per-hour, points, and miles-per-gallon.

VEHICLE DYNAMICS (seconds)	BRAKING RATE (ft/sec^2)	ACCELERATION TO 100MPH (seconds)	TOP SPEED (mph)	ERGONOMICS & COMMUNICATIONS (points)	FUEL ECONOMY (mpg)
94.39	30.77	13.65	154	235.88	21.00

STEP II: DEVIATION FACTOR

In each evaluation category, the best scoring vehicle's score is used as the benchmark against which each of the other vehicles' scores are compared. (In the Vehicle Dynamics and Acceleration categories the lowest score is best, while in the remainder of the categories, the highest score is best.) The best scoring vehicle in a given category received a deviation factor of "0." The "deviation factor" is then calculated by determining the absolute difference between each vehicle's raw score and the best score in that category. The absolute difference is then divided by the best score, with the result being the "deviation factor."

CAR MAKE/MODEL	TOP SPEED
CAR "A"	130 0.156
CAR "B"	139 0.097
CAR "C"	148 0.039
CAR "D"	154 0.000

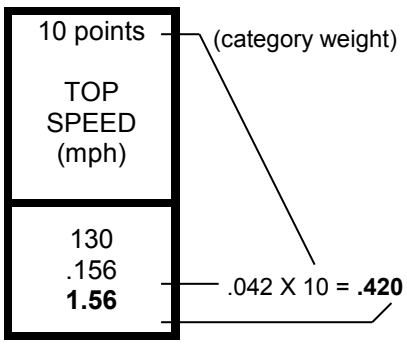
EXAMPLE:

Best Score (Car "D")		Other Vehicle Score (Car "A")		Absolute Difference		Best Score		Deviation Factor (Car "A")
154	-	130	=	24	/	154	=	.**156**

STEP III: WEIGHTED CATEGORY SCORE

Each vehicle's weighted category score is determined by multiplying the deviation factor (as determined in Step II) by the category weight.

RAW SCORE
DEVIATION FACTOR
WEIGHTED CATEGORY SCORE



*All mathematical computations are to be rounded to the third decimal place.

STEP IV: TOTAL WEIGHTED SCORE

Adding together the six (6) weighted category scores for that vehicle derives the total weighted score for each vehicle.

EXAMPLE:

CAR	30 pts. VEHICLE DYNAMICS (seconds)	25 pts. BRAKE DECELERATION (ft/sec^2)	20 pts. ACCELERATION (seconds)	10 pts. TOP SPEED (mph)	10 pts. ERGONOMICS & COMMUNICATION (points)	5 pts. FUEL ECONOMY (mpg)	TOTAL WEIGHTED SCORE
Car "A"	97.71 .035 1.055	29.82 .031 .772	18.43 .350 7.004	139 .097 .970	235.88 .000 .000	18 .143 .714	**10.515**

STEP V: BID ADJUSTMENT FIGURE

The bid adjustment figure that we have chosen to use is one percent (1%) of the lowest bid price received. As an example, in this and the following two steps, the lowest bid price received was $18,097.00, which results in a bid adjustment figure of **$180.97**.

STEP VI: ACTUAL DOLLAR ADJUSTMENT

The actual dollar adjustment for a vehicle is determined by multiplying that vehicle's total weighted score by the bid adjustment figure as shown at right.

TOTAL WEIGHTED SCORE		BID ADJUSTMENT FIGURE		ACTUAL DOLLAR ADJUSTMENT
10.515	X	$180.97	=	$1,902.20

STEP VII: ADJUSTED BID PRICE

The actual dollar adjustment amount arrived at for each vehicle is added to that vehicle's bid price. Provided other necessary approvals are received, the vehicle with the lowest adjusted bid price will be the vehicle purchased. (The amount paid for the purchased vehicles will be the actual bid price.)

ACTUAL DOLLAR ADJUSTMENT		ACTUAL BID PRICE		ADJUSTED BID PRICE
$1,902.90	+	$23,414.00	=	$25,316.90

MOTORCYCLES

Like many law enforcement agencies, the Michigan State Police used motorcycles until late 1941 and then switched to automobiles. The Michigan State Police rekindled interest in motorcycles for day to day patrol operations in 1993. In 2004, Michigan State Police headquarters asked if we had additional information as a resource for our purchasing decisions regarding motorcycles. During that time, we were given direction to expand vehicle testing to include motorcycle testing. We would like to thank BMW, Harley-Davidson, Moto Guzzi, and Victory for participating and providing their assistance in preparation for this year's successful testing program.

We are constantly evaluating our various tests with the manufacturers and the law enforcement industry to provide you with the most objective test data available. While there are many similarities to automobiles, there are also quite a few differences.

This year we conducted motorcycle brake testing on our track at the Precision Driving Unit in Lansing. Our facility provides a very flat and consistent surface for this type of testing. Thus, better information is provided to the reader as to the braking capabilities of each motorcycle.

The motorcycle dynamics portion was again conducted at Grattan Raceway. Grattan Raceway provides a two mile road course that has several different curves and elevation changes that tests the motorcycles high speed handling characteristics during pursuit and emergency response riding. See the motorcycle dynamics test objectives for further information.

When looking at the data, it is very important for the reader to apply your mission requirements to the motorcycle you are considering so you may make an appropriate decision. This report is not an endorsement of products, but a means of learning what's available for your officers so they can do their job more effectively and safely. If anything in this report requires further explanation or clarification, please call or write the Michigan State Police Precision Driving Unit.

BMW R1200 RTP

TEST MOTORCYCLE DESCRIPTION

MAKE BMW	**MODEL** R1200 RT-P		**SALES CODE NO.** 13RB	
ENGINE DISPLACEMENT	**CUBIC CENTIMETERS** 1170		**ENGINE** 2-Cylinder	
FUEL SYSTEM	BMSK-P Injection		**EXHAUST** Stainless Steel with Catalytic Converter	
BORE & STROKE	101 mm x 73 mm		**ALTERNATOR** 720 W	
TORQUE	88 ft. – lbs. @ 6000 RPM		**BATTERY** 2 x 19 Ah Gel Maintenance Free	
COMPRESSION RATIO	12.0:1			
TRANSMISSION	**PRIMARY DRIVE** Gear 1:1.882	**FINAL DRIVE** Shaft with Ring & Pinion Gear		
GEAR RATIO	1:2.75 Rear Drive Ratio			
LEAN ANGLE	**LEFT** 46°		**RIGHT** 46°	
CLUTCH	Self-Adjusting Hydraulic Actuating Single Plate Dry Clutch			
WHEELS/TIRES	Die Cast Aluminum MTH2 Rim Profile Fitted with Dunlop Road Smart Run-Flat Tires (Front 120/70ZR17 Rear: 180/55ZR17) (California Highway Patrol run flat protocol compliant)			
FRONT SUSPENSION	**FORK ANGLE** 63.4 BMW Telelever		**RAKE** Castor in normal Position – 4.3”	
REAR SUSPENSION	BMW Evo Paralever			
SUSPENSION TRAVEL	**FRONT** 4.7 inches		**REAR** 5.3 inches	
GROUND CLEARANCE, MINIMUM	5.125 inches			
BRAKE SYSTEM	BMW IABS II Partial-Integral Brake System			
BRAKES, FRONT	**TYPE** Dual 12.6” Disc		**SWEPT AREA** 186 sq. in.	
BRAKES, REAR	**TYPE** Single 10.4” Disc		**SWEPT AREA** 62 sq. in,	
FUEL CAPACITY	**GALLONS** 6.6		**LITERS** 25.0	
OIL CAPACITY	4 Quarts			
GENERAL MEASUREMENTS	**WHEELBASE** 58.4 inches		**LENGTH** 87.8 inches	
	TEST WEIGHT 671 lbs.		**OVERALL HEIGHT** 56.3 in.	
	SEAT HEIGHT 32.2” / 33.1” (30.7” / 31.5” Optional Low Seat)			
EPA MILEAGE EST. (MPG) (Based on *FTP Standard Test)	**CITY** 43.3*	**HIGHWAY** 65.3*		

* FTP (Federal Test Procedure) mileage figures exhaust emission test

BMW F800 GTP

TEST MOTORCYCLE DESCRIPTION

MAKE BMW	**MODEL** F800 GT-P		**SALES CODE NO.** 13FB	
ENGINE DISPLACEMENT	**CUBIC CENTIMETERS** 798		**ENGINE** Twin	
FUEL SYSTEM	Electronic Intake Pipe Injection BMS-K-+ Management		**EXHAUST** Closed Loop 3-Way CAT/Stainless	
BORE & STROKE	82 mm x 75.6 mm		**ALTERNATOR** 3-Phase 400W	
TORQUE	63 ft. – lbs. @ 5800 RPM		**BATTERY** 12V/12Ah Maintenance Free	
COMPRESSION RATIO	12.0:1			
TRANSMISSION	**PRIMARY DRIVE** Gear	**FINAL DRIVE** Belt with Shock Damper		
GEAR RATIO	1.943 (35/68 teeth)			
LEAN ANGLE	**LEFT** 46° (49° without center stand)		**RIGHT** 46° (49° without center stand)	
CLUTCH	Wet Multi-Plate in Oil Bath			
WHEELS/TIRES	Cast Alloy Wheels with Metzler OEM Tires (Front: 120/70ZR17 Rear:180/55ZR17)			
FRONT SUSPENSION	**FORK ANGLE** 64.2°		**CASTOR** 3.7 in.	
REAR SUSPENSION	Single Sided Swing Arm with Central Spring Strut			
SUSPENSION TRAVEL	**FRONT** 4.9 inches		**REAR** 4.9 inches	
GROUND CLEARANCE, MINIMUM	5.2 inches			
BRAKE SYSTEM	Hydraulic with Standard ABS			
BRAKES, FRONT	**TYPE** Dual 12.6” Disc		**SWEPT AREA** 186 sq. in.	
BRAKES, REAR	**TYPE** Single 10.4” Disc		**SWEPT AREA** 62 sq. in,	
FUEL CAPACITY	**GALLONS** 4.0		**LITERS** 15.0	
OIL CAPACITY	3.2 Quarts, with filter replacement			
GENERAL MEASUREMENTS	**WHEELBASE** 59.6 inches		**LENGTH** 84.9 inches	
	TEST WEIGHT 563 lbs.		**OVERALL HEIGHT** 49.1 in.	
	SEAT HEIGHT 31.5 inches			
EPA MILEAGE EST. (MPG) (Based on *FTP Standard Test)	**CITY** 69 @ 55 mph	**HIGHWAY** 55 @ 75 mph		

Harley Davidson FLHP

TEST MOTORCYCLE DESCRIPTION

MAKE Harley-Davidson	**MODEL** FLHP		**SALES CODE NO.**	
ENGINE DISPLACEMENT	**CUBIC CENTIMETERS** 1690CC		**ENGINE** Twin Cam 103 HO Air Cooled V-Twin 4 Stroke w/Oil Cooler	
FUEL SYSTEM	Electronic Sequential Port FI		**EXHAUST** Two into One into Two Crossover Dual	
BORE & STROKE	3.875 X 4.375		**ALTERNATOR** 50 Amp	
TORQUE	104.7 @ 3250 RPM		**BATTERY** 12VDC, 28 Amp/Hour, 270 CCA	
COMPRESSION RATIO	9.7:1			
TRANSMISSION	**PRIMARY DRIVE** 34/46	**FINAL DRIVE** 32/68		
GEAR RATIO	1st: 9.593; 2nd: 6.650; 3rd:4.938; 4th: 4.0; 5th: 3.407; 6th: 2.875			
LEAN ANGLE	**LEFT** 31°		**RIGHT** 33°	
CLUTCH	Wet Multi-Plate / Cable Actuated			
WHEELS/TIRES	Wheels: Impeller Cast Aluminum Front & Rear (Front 17x3, Rear 16x5) Tires: Front Dunlop D408F 130/80B17 – Rear Dunlop D407T 180/65B16 (California Highway Patrol run flat protocol compliant)			
FRONT SUSPENSION	**FORK ANGLE** 29.25°		**RAKE** 26°	
REAR SUSPENSION	Swing Arm with Air Adjustable Shocks			
SUSPENSION TRAVEL	**FRONT** 4.60 inches		**REAR** 3.0 inches	
GROUND CLEARANCE, MINIMUM	5.3 inches			
BRAKE SYSTEM	Hydraulic Disc/Reflex™ Electronically Linked with ABS			
BRAKES, FRONT	**TYPE** Dual Disc		**SWEPT AREA** 180 inches²	
BRAKES, REAR	**TYPE** Single Disc		**SWEPT AREA** 90 inches²	
FUEL CAPACITY	**GALLONS** 6.0		**LITERS** 22.71	
OIL CAPACITY	4.0 Quarts			
GENERAL MEASUREMENTS	**WHEELBASE** 64 inches		**LENGTH** 96.5 inches	
	TEST WEIGHT 840 lbs.		**OVERALL HEIGHT** 56.3 in.	
	SEAT HEIGHT 27.3 Inches-Laden			
EPA MILEAGE EST. (MPG) (Based on *FTP Standard Test)	**COMBINED** 42 MPG			

Harley Davidson FLHTP

TEST MOTORCYCLE DESCRIPTION

MAKE Harley-Davidson	**MODEL** FLHTP		**SALES CODE NO.**	
ENGINE DISPLACEMENT	**CUBIC CENTIMETERS** 1690CC		**ENGINE** Twin Cam 103 HO Air Cooled V-Twin 4 Stroke w/Oil Cooler	
FUEL SYSTEM	Electronic Sequential Port FI		**EXHAUST** Two into One into Two Crossover Dual	
BORE & STROKE	3.875 X 4.375		**ALTERNATOR** 50 Amp	
TORQUE	104.7 @ 3250 RPM		**BATTERY** 12VDC, 28 Amp/Hour, 270 CCA	
COMPRESSION RATIO	9.7:1			
TRANSMISSION	**PRIMARY DRIVE** 34/46	**FINAL DRIVE** 32/68		
GEAR RATIO	1st: 9.593; 2nd: 6.650; 3rd:4.938; 4th: 4.0; 5th: 3.407; 6th: 2.875			
LEAN ANGLE	**LEFT** 31°		**RIGHT** 33°	
CLUTCH	Wet Multi-Plate / Hydraulically Actuated			
WHEELS/TIRES	Wheels: Impeller Cast Aluminum Front & Rear (Front 17x3, Rear 16x5) Tires: Front Dunlop D408F 130/80B17 – Rear Dunlop D407T 180/65B16 (California Highway Patrol run flat protocol compliant)			
FRONT SUSPENSION	**FORK ANGLE** 29.25°		**RAKE** 26°	
REAR SUSPENSION	Swing Arm with Air Adjustable Shocks			
SUSPENSION TRAVEL	**FRONT** 4.60 inches		**REAR** 3.0 inches	
GROUND CLEARANCE, MINIMUM	5.3 inches			
BRAKE SYSTEM	Hydraulic Disc/Reflex™ Electronically Linked with ABS			
BRAKES, FRONT	**TYPE** Dual Disc		**SWEPT AREA** 180 inches²	
BRAKES, REAR	**TYPE** Single Disc		**SWEPT AREA** 90 inches²	
FUEL CAPACITY	**GALLONS** 6.0		**LITERS** 22.71	
OIL CAPACITY	4.0 Quarts			
GENERAL MEASUREMENTS	**WHEELBASE** 64 inches		**LENGTH** 96.5 inches	
	TEST WEIGHT 836 lbs.		**OVERALL HEIGHT** 56.3 in.	
	SEAT HEIGHT 27.3 Inches-Laden			
EPA MILEAGE EST. (MPG) (Based on *FTP Standard Test)	**COMBINED** 42 MPG			

Moto Guzzi California 1400 Touring ABS

TEST MOTORCYCLE DESCRIPTION

MAKE Moto Guzzi	**MODEL** California 1400 Touring		**SALES CODE NO.**
ENGINE DISPLACEMENT	**CUBIC CENTIMETERS** 1380CC		**ENGINE** 90° V-Twin, 4-Stroke, 4 Valves, Double Ignition
FUEL SYSTEM	Phased Electronic Multiport Sequential Injection, Magneti Marelli IAW7SM		**EXHAUST** Stainless Steel, 2-in-2 type, three-way catalytic converter with double lambda probe
BORE & STROKE	104mm X 81.2 mm		**ALTERNATOR** 12V – 550 W
TORQUE	87 lb/ft		**BATTERY** 12V – 18Ah
COMPRESSION RATIO	10.5:1		
TRANSMISSION	**PRIMARY DRIVE** 26/35 with helical teeth	**FINAL DRIVE** double cardan joint and fixed bevel gear seat, drive ratio 10/36	
GEAR RATIO	1^{st}: 2.235; 2^{nd}: 1.700; 3^{rd}: 1.348; 4^{th}: 1.115; 5^{th}: 0.968; 6^{th}: 0.8		
LEAN ANGLE	**LEFT** 36°	**RIGHT** 36°	
CLUTCH	Single-Disc with integrated anti-vibration buffer		
WHEELS/TIRES	Wheels: Aluminum Alloy (Front Rim 3.50” x 18”, Rear Rim 6.00” x 16”) Tires: Front 130/70R18 – Rear 200/60R16		
FRONT SUSPENSION	**FORK ANGLE** 32°	**RAKE** 38°	
REAR SUSPENSION	Swingarm with double shock absorber with adjustable spring preload and rebound damping. (Custom: special shocks with separated reservoir tank, adjustable spring preload and compression/rebound damping)		
SUSPENSION TRAVEL	**FRONT** 4.7 inches (120mm)	**REAR** 4.3 inches (110 mm)	
GROUND CLEARANCE, MINIMUM	6.4 inches (165 mm)		
BRAKE SYSTEM			
BRAKES, FRONT	Dual 320 mm stainless steel floating discs, Brembo radial calipers with 4 horizontally opposed pistons		
BRAKES, REAR	282 mm stainless steel fixed disc, Brembo floating caliper with 2 parallel pistons		
FUEL CAPACITY	**GALLONS** 5.4 (Reserve – 1.3)	**LITERS** 20.5 (Reserve – 5)	
OIL CAPACITY	Engine plus Filter: 4010cc; Gear Box: 250cc		
GENERAL MEASUREMENTS	**WHEELBASE** 66.3 inches (1685 mm)	**LENGTH** 96.2 inches (2445 mm)	
	TEST WEIGHT 799 pounds	**OVERALL HEIGHT** 57.4 inches	
	SEAT HEIGHT 29.1 inches (740 mm) (Optional: 28.3 inches – 720 mm)		
EPA MILEAGE EST. (MPG) (Based on *FTP Standard Test)	**CITY** 32.1 MPG	**HIGHWAY** 38.3 MPG	**COMBINED** 37.6 MPG

Moto Guzzi
Norge 1200 ABS

TEST MOTORCYCLE DESCRIPTION

MAKE Moto Guzzi	**MODEL** Norge 1200 ABS	**SALES CODE NO.**	
ENGINE DISPLACEMENT	**CUBIC CENTIMETERS** 1151CC	**ENGINE** 90° V-Twin, 4-Stroke	
FUEL SYSTEM	Fuel Injection	**EXHAUST** 2 into 1 Stainless Dual Lambda	
BORE & STROKE	95 mm X 81.2 mm	**ALTERNATOR** 12V – 540 W	
TORQUE	90CV at 7500 RPM	**BATTERY** 12V-18 Amp/h	
COMPRESSION RATIO	9.8:1		
TRANSMISSION	Mechanical 6 gear with pedal lever on the left side of the engine	**PRIMARY DRIVE** 24/35	
GEAR RATIO	1^{st}: 17/38; 2^{nd}: 20/34; 3^{rd}: 23/31; 4^{th}: 26/29; 5^{th}: 31/30; 6^{th}: 29/25 Secondary Drive: 12/44 (Cardan)		
LEAN ANGLE	**LEFT** 45°	**RIGHT** 45°	
CLUTCH	Dry Dual Disc		
WHEELS/TIRES	Wheels: Alloy (Front Rim 3.5” x 17”, Rear Rim 5.5” x 17”) Tires: Front 120/70ZR17 – Rear 180/55ZR17		
FRONT SUSPENSION	**FORK ANGLE** 25.30°	**RAKE** 32°	
REAR SUSPENSION	Single sided with progressive linkage, single shock absorber with adjustable rebound, adjustable preload settings with ergonomic handle		
SUSPENSION TRAVEL	**FRONT** 4.7 inches	**REAR** 5.5 inches	
GROUND CLEARANCE, MINIMUM	72.8 inches		
BRAKE SYSTEM			
BRAKES, FRONT	Dual stainless steel floating disc brake diameter – 320 mm – 4 paired differentiated calipers		
BRAKES, REAR	Stainless steel disc brake diameter – 282 mm – parallel dual calipers		
FUEL CAPACITY	**GALLONS** 6 gallons	**LITERS** 23 liters	
OIL CAPACITY			
GENERAL MEASUREMENTS	**WHEELBASE** 58.9 inches	**LENGTH** 86.4 inches	
	TEST WEIGHT 673 pounds	**OVERALL HEIGHT** 55.3 inches	
	SEAT HEIGHT 31.5 inches		
EPA MILEAGE EST. (MPG) (Based on *FTP Standard Test)	**CITY** 28.1 MPG	**HIGHWAY** 37.6 MPG	**COMBINED** 39.3 MPG

Victory Commander

TEST MOTORCYCLE DESCRIPTION

MAKE Victory	**MODEL** Commander	**SALES CODE NO.**	
ENGINE DISPLACEMENT	**CUBIC CENTIMETERS** 1731 cc	**ENGINE** Overhead Cam, 106 oil/air cooled, v-twin 4 stroke with oil cooler	
FUEL SYSTEM	Electronic Fuel Injection with Dual 45mm Throttle Body	**EXHAUST** Two into One into Two Crossover Dual	
BORE & STROKE	101 mm x 108 mm	**ALTERNATOR** 48 amp	
TORQUE	113 ft/lbs @ 2700 RPM	**BATTERY** 12V 18 Amp/hour 240 CCA	
COMPRESSION RATIO	9.4:1		
TRANSMISSION	**PRIMARY DRIVE** Wet. Gear Drive with Torque Compensator 1:5:1	**FINAL DRIVE** Carbon Fiber Reinforced Belt 2.12:1	
GEAR RATIO	1st: 3.13:1; 2nd: 2.02:1; 3rd: 1.50:1; 4th: 1.20:1; 5th: 1:1; 6th: .87.1		
LEAN ANGLE	**LEFT** 33°	**RIGHT** 33°	
CLUTCH	Wet Multi-Plate		
WHEELS/TIRES	Wheels: Cast Aluminum – Front: 18 in x 3 in – Rear: 16 in x 5 in Tires: Front: Dunlop Elite 3 130/70R18, Rear: Dunlop Elite 3 180/60R16		
FRONT SUSPENSION	**FORK ANGLE** 5.6 in	**RAKE** 29.0	
REAR SUSPENSION	Link mono air adjustable shock		
SUSPENSION TRAVEL	**FRONT** 5.1 inches	**REAR** 4.7 inches	
GROUND CLEARANCE, MINIMUM	5.8 inches		
BRAKE SYSTEM	Independent ABS		
BRAKES, FRONT	**TYPE** Dual 300 x 5 mm floating rotor with 4 piston calipers ABS		
BRAKES, REAR	**TYPE** Single 300 x 7 mm floating rotor with 2 piston calipers ABS		
FUEL CAPACITY	**GALLONS** 5.8	**LITERS** 22	
OIL CAPACITY	5.0 Quarts		
GENERAL MEASUREMENTS	**WHEELBASE** 65.7 inches	**LENGTH** 106.4 inches	
	TEST WEIGHT 868 lbs.	**OVERALL HEIGHT** 53.2 in.	
	SEAT HEIGHT 26.25 inches		
EPA MILEAGE EST. (MPG) (Based on *FTP Standard Test)	**CITY** 42	**HIGHWAY** 47	**COMBINED** 44.5

MOTORCYCLE DYNAMICS TESTING

MOTORCYCLE DYNAMICS TEST OBJECTIVE

To determine each motorcycle's high speed handling characteristics and performance in comparison to other motorcycles. The course used is a two mile road racing type configuration containing hills, curves, and corners. The course simulates actual conditions encountered in pursuit or emergency driving situations in the field, with the exception of other traffic. The evaluation is a true test of the motorcycle manufacturers in offering balanced packages of acceleration capabilities, suspension components, and braking characteristics.

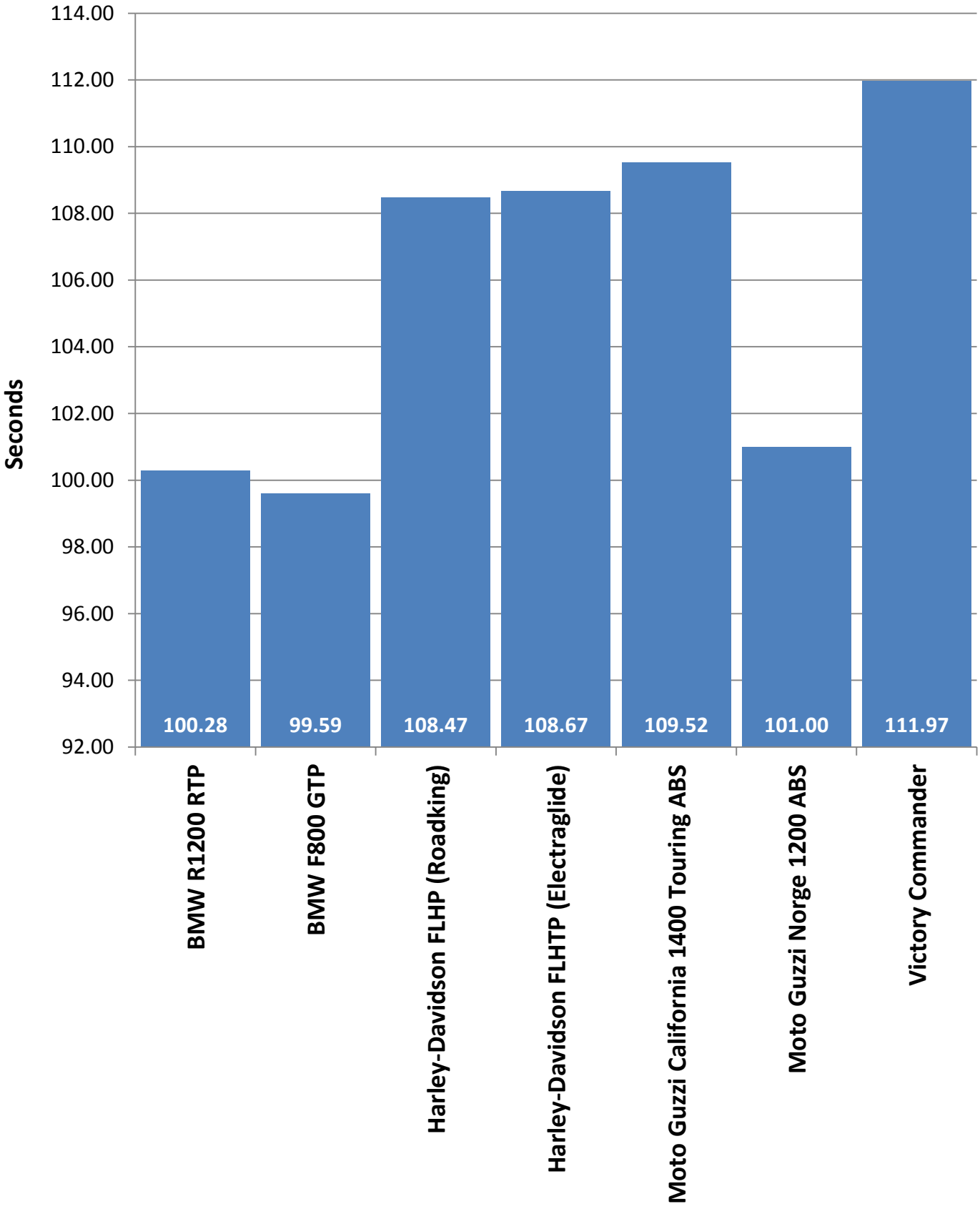
MOTORCYCLE DYNAMICS TEST METHODOLOGY

Each motorcycle is ridden over the course a total of 32 timed laps using four separate riders, each riding an 8 lap series. The final score for the motorcycle is the combined average (from the four riders) of the 5 fastest laps for each rider during the 8 lap series.

MOTORCYCLE DYNAMICS TESTING ON SEPTEMBER 19, 2013

Vehicles	Drivers	Lap 1	Lap 2	Lap 3	Lap 4	Lap 5	Average
BMW R1200 RTP	GROMAK	01:39.30	01:40.05	01:40.12	01:40.34	01:40.35	01:40.03
	JOHNSON	01:39.54	01:39.59	01:39.61	01:39.75	01:39.78	01:39.65
	ROGERS	01:39.61	01:39.65	01:39.88	01:39.91	01:40.10	01:39.83
	TRAMMEL	01:41.46	01:41.53	01:41.62	01:41.65	01:41.78	01:41.61
Overall Average							**01:40.28**
BMW F800 GTP	GROMAK	01:36.48	01:36.60	01:37.25	01:37.50	01:38.16	01:37.20
	JOHNSON	01:37.50	01:37.71	01:38.42	01:39.36	01:39.67	01:38.53
	ROGERS	01:36.91	01:38.10	01:38.58	01:38.84	01:39.79	01:38.44
	TRAMMEL	01:43.73	01:43.78	01:44.22	01:44.60	01:44.61	01:44.19
Overall Average							**01:39.59**
Harley Davidson FLHP (Roadking)	GROMAK	01:48.09	01:48.21	01:48.46	01:48.62	01:48.80	01:48.44
	JOHNSON	01:47.14	01:47.38	01:47.68	01:47.73	01:47.73	01:47.53
	ROGERS	01:47.63	01:47.73	01:47.94	01:48.40	01:48.67	01:48.07
	TRAMMEL	01:49.64	01:49.74	01:49.78	01:49.95	01:50.06	01:49.83
Overall Average							**01:48.47**
Harley Davidson FLHTP (Electraglide)	GROMAK	01:49.43	01:49.60	01:49.63	01:49.63	01:49.86	01:49.63
	JOHNSON	01:46.11	01:46.37	01:46.39	01:46.47	01:46.50	01:46.37
	ROGERS	01:48.34	01:48.56	01:48.81	01:48.94	01:49.13	01:48.76
	TRAMMEL	01:49.64	01:49.87	01:49.95	01:50.04	01:50.15	01:49.93
Overall Average							**01:48.67**
Moto Guzzi California 1400 Touring ABS	GROMAK	01:48.95	01:49.15	01:49.29	01:49.41	01:49.48	01:49.26
	JOHNSON	01:48.80	01:49.15	01:49.35	01:49.38	01:49.42	01:49.22
	ROGERS	01:47.63	01:47.94	01:48.22	01:48.41	01:48.42	01:48.12
	TRAMMEL	01:50.87	01:51.27	01:51.55	01:51.72	01:51.89	01:51.46
Overall Average							**01:49.52**
Moto Guzzi Norge 1200 ABS	GROMAK	01:38.55	01:38.57	01:39.48	01:39.52	01:39.56	01:39.14
	JOHNSON	01:39.40	01:39.72	01:39.77	01:39.85	01:40.40	01:39.83
	ROGERS	01:40.40	01:40.73	01:40.86	01:40.96	01:41.24	01:40.84
	TRAMMEL	01:43.79	01:44.04	01:44.18	01:44.48	01:44.49	01:44.20
Overall Average							**01:41.00**
Victory Commander	GROMAK	01:52.62	01:52.85	01:53.16	01:53.59	01:53.92	01:53.23
	JOHNSON	01:50.62	01:50.73	01:50.86	01:51.04	01:51.24	01:50.90
	ROGERS	01:51.01	01:51.18	01:51.31	01:51.40	01:51.42	01:51.26
	TRAMMEL	01:51.91	01:52.49	01:52.61	01:52.65	01:52.70	01:52.47
Overall Average							**01:51.97**

2014 Motorcycle Dynamics



MOTORCYCLE ACCELERATION
&
TOP SPEED TESTING

ACCELERATION TEST OBJECTIVE

To determine the ability of each test motorcycle to accelerate from a standing start to 60 mph, 80 mph, and 100 mph.

ACCELERATION TEST METHODOLOGY

Using a Kistler L-350 Single Axis Optical Sensor, each motorcycle is driven through four acceleration sequences, two northbound and two southbound, to allow for wind direction. The four resulting times for each target speed are averaged and the average times are used to derive scores on the competitive test for acceleration.

TOP SPEED TEST OBJECTIVE

To determine the actual top speed attainable by each test motorcycle within a distance of 14 miles from a standing start.

TOP SPEED TEST METHODOLOGY

Following the fourth acceleration run, each test motorcycle will continue to accelerate to the top speed attainable within 14 miles from the start of the run. The highest speed attained within the 14-mile distance will be the vehicle's score on the competitive test for top speed.

TEST LOCATION: Chrysler Proving Grounds **DATE:** September 21, 2013

BMW R1200 RTP

BEGINNING TIME: 2:56 p.m. **TEMPERATURE:** 64.2° F
WIND VELOCITY: 6.7 mph **WIND DIRECTION:** 332°

SPEEDS	TIME REQUIREMENTS*	RUN 1	RUN 2	RUN 3	RUN 4	AVERAGE
0 – 60	**9.0 sec.**	4.39	4.40	4.38	4.29	**4.37**
0 – 80	**14.9 sec.**	6.79	6.89	6.76	6.74	**6.80**
0 – 100	**24.6 sec.**	10.69	11.09	10.62	10.75	**10.79**

DISTANCE TO REACH 110 MPH: .25 mile
DISTANCE TO REACH 120 MPH: .54 mile

TOP SPEED ATTAINED: 130 mph

BMW F800 GTP

BEGINNING TIME: 12:56 p.m. **TEMPERATURE:** 63.2° F
WIND VELOCITY: 7.9 mph **WIND DIRECTION:** 312°

SPEEDS	TIME REQUIREMENTS*	RUN 1	RUN 2	RUN 3	RUN 4	AVERAGE
0 – 60	**9.0 sec.**	5.08	4.92	4.99	4.97	**4.99**
0 – 80	**14.9 sec.**	7.69	7.72	7.68	7.74	**7.71**
0 – 100	**24.6 sec.**	11.87	12.34	11.90	12.27	**12.10**

DISTANCE TO REACH 110 MPH: .33 mile
DISTANCE TO REACH 120 MPH: .59 mile

TOP SPEED ATTAINED: 139 mph

Michigan State Police minimum requirement.

TEST LOCATION: Chrysler Proving Grounds **DATE:** September 21, 2013

Harley Davidson FLHP (Roadking)

BEGINNING TIME: 11:19 a.m. **TEMPERATURE:** 61.6° F
WIND VELOCITY: 8.2 mph **WIND DIRECTION:** 337°

SPEEDS	TIME REQUIREMENTS*	RUN 1	RUN 2	RUN 3	RUN 4	AVERAGE
0 – 60	**9.0 sec.**	5.48	5.70	5.56	5.53	**5.57**
0 – 80	**14.9 sec.**	9.29	10.18	9.57	9.95	**9.75**
0 – 100	**24.6 sec.**	17.57	14.72	17.88	24.30	**18.62**

DISTANCE TO REACH 110 MPH: 9.66 miles
DISTANCE TO REACH 120 MPH: N/A

TOP SPEED ATTAINED: 110 mph

Harley-Davidson FLHTP (Electraglide)

BEGINNING TIME: 4:45 p.m. **TEMPERATURE:** 63.8° F
WIND VELOCITY: 7.1 mph **WIND DIRECTION:** 333°

SPEEDS	TIME REQUIREMENTS*	RUN 1	RUN 2	RUN 3	RUN 4	AVERAGE
0 – 60	**9.0 sec.**	5.29	5.63	5.51	5.70	**5.53**
0 – 80	**14.9 sec.**	9.36	9.88	9.39	9.67	**9.58**
0 – 100	**24.6 sec.**	17.72	20.17	18.50	22.00	**19.60**

DISTANCE TO REACH 110 MPH: N/A
DISTANCE TO REACH 120 MPH: N/A

TOP SPEED ATTAINED: 107 mph

Michigan State Police minimum requirement.

TEST LOCATION: Chrysler Proving Grounds **DATE:** September 21, 2013

Moto Guzzi California 1400 Touring ABS

BEGINNING TIME: 10:07 a.m. **TEMPERATURE:** 59.6° F
WIND VELOCITY: 6.4 mph **WIND DIRECTION:** 333°

SPEEDS	TIME REQUIREMENTS*	RUN 1	RUN 2	RUN 3	RUN 4	AVERAGE
0 – 60	**9.0 sec.**	5.48	5.70	5.35	5.50	**5.51**
0 – 80	**14.9 sec.**	9.10	9.35	8.88	8.94	**9.07**
0 – 100	**24.6 sec.**	15.54	14.62	15.37	16.28	**15.45**

DISTANCE TO REACH 110 MPH: .61 mile
DISTANCE TO REACH 120 MPH: 4.96 miles

TOP SPEED ATTAINED: 122 mph

Moto Guzzi Norge 1200 ABS

BEGINNING TIME: 3:51 p.m. **TEMPERATURE:** 65.9° F
WIND VELOCITY: 6.8 mph **WIND DIRECTION:** 317°

SPEEDS	TIME REQUIREMENTS*	RUN 1	RUN 2	RUN 3	RUN 4	AVERAGE
0 – 60	**9.0 sec.**	4.60	4.50	4.57	4.54	**4.55**
0 – 80	**14.9 sec.**	7.31	7.41	7.38	7.43	**7.38**
0 – 100	**24.6 sec.**	11.43	11.97	11.44	12.27	**11.78**

DISTANCE TO REACH 110 MPH: .37 mile
DISTANCE TO REACH 120 MPH: .72 mile

TOP SPEED ATTAINED: 129 mph

Victory Commander

BEGINNING TIME: 1:55 p.m. **TEMPERATURE:** 65.6° F
WIND VELOCITY: 8.2 mph **WIND DIRECTION:** 324°

SPEEDS	TIME REQUIREMENTS*	RUN 1	RUN 2	RUN 3	RUN 4	AVERAGE
0 – 60	**9.0 sec.**	5.25	5.31	5.19	5.49	**5.31**
0 – 80	**14.9 sec.**	9.22	9.27	8.95	9.32	**9.19**
0 – 100	**24.6 sec.**	16.73	14.46	15.80	16.98	**15.99**

DISTANCE TO REACH 110 MPH: 1.88 miles
DISTANCE TO REACH 120 MPH: N/A

TOP SPEED ATTAINED: 115 mph

Michigan State Police minimum requirement.

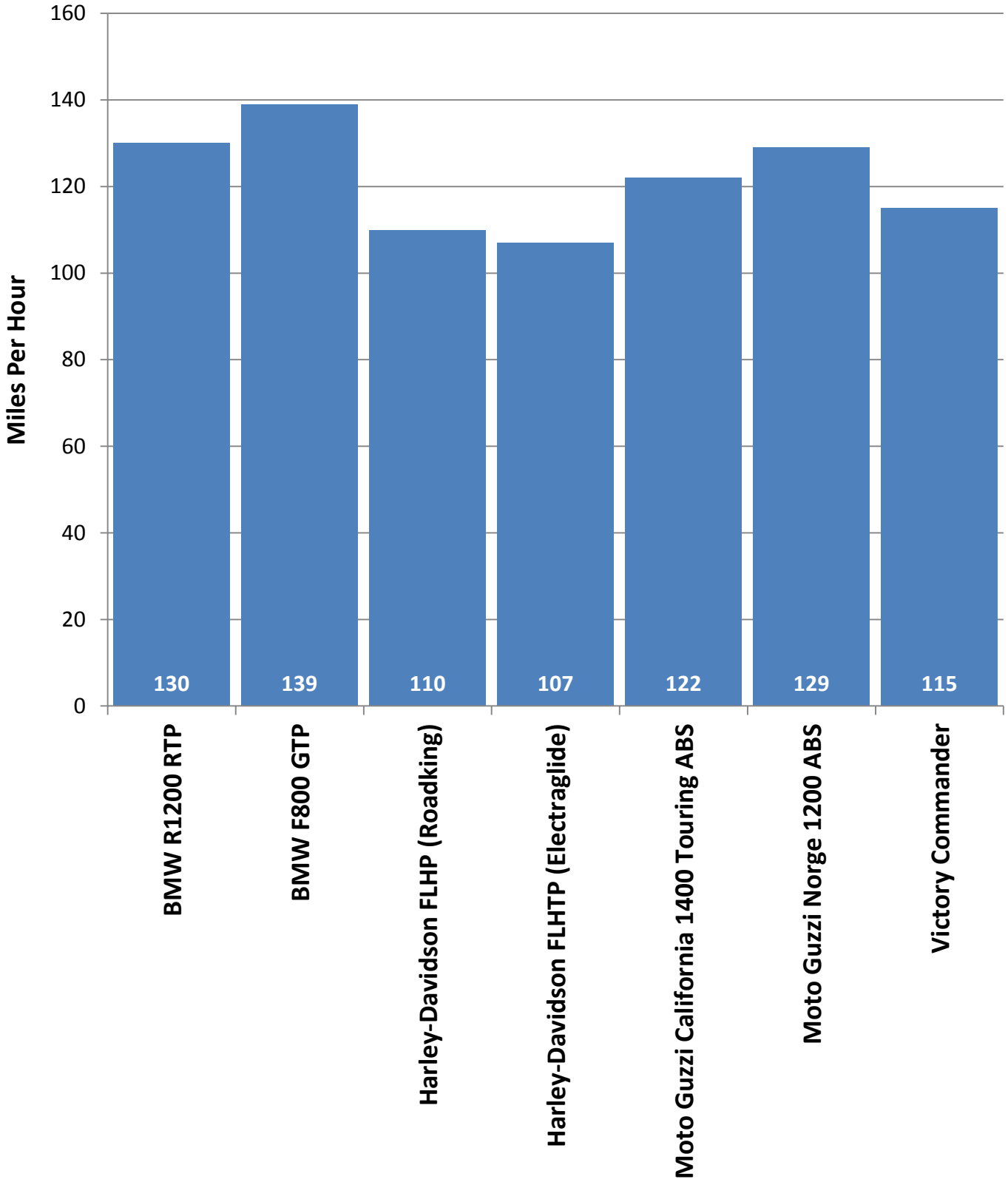
SUMMARY OF MOTORCYCLE ACCELERATION & TOP SPEED

	BMW R1200 RTP	BMW F800 GTP	Harley Davidson FLHP (Roadking)	Harley Davidson FLHTP (Electraglide)
0-20 mph (sec)	1.35	1.64	1.38	1.34
0-30 mph (sec)	1.93	2.43	2.15	2.09
0-40 mph (sec)	2.57	3.13	2.98	2.91
0-50 mph (sec)	3.54	3.85	4.13	4.09
0-60 mph (sec)	4.37	4.99	5.57	5.53
0-70 mph (sec)	5.54	6.04	7.30	7.23
0-80 mph (sec)	6.80	7.71	9.75	9.58
0-90 mph (sec)	8.60	9.64	13.17	13.09
0-100 mph (sec)	10.79	12.10	18.62	19.60
TOP SPEED (mph)	130 mph	139 mph	110 mph	107 mph
QUARTER MILE (sec)	12.86 seconds	13.62 seconds	14.45 seconds	14.39 seconds
SPEED (mph)	105.51 mph	104.18 mph	92.60 mph	92.01 mph

	Moto Guzzi California 1400 Touring ABS	Moto Guzzi Norge 1200 ABS	Victory Commander
0-20 mph (sec)	1.78	1.23	1.24
0-30 mph (sec)	2.51	2.03	1.89
0-40 mph (sec)	3.28	2.69	2.89
0-50 mph (sec)	4.42	3.68	3.84
0-60 mph (sec)	5.51	4.55	5.31
0-70 mph (sec)	7.12	5.81	7.07
0-80 mph (sec)	9.07	7.38	9.19
0-90 mph (sec)	11.67	9.08	12.34
0-100 mph (sec)	15.45	11.78	15.99
TOP SPEED (mph)	122 mph	129 mph	115 mph
QUARTER MILE (sec)	14.38 seconds	13.31 seconds	14.18 seconds
SPEED (mph)	95.66 mph	102.41 mph	93.66 mph

2014 Motorcycle Top Speed Comparison

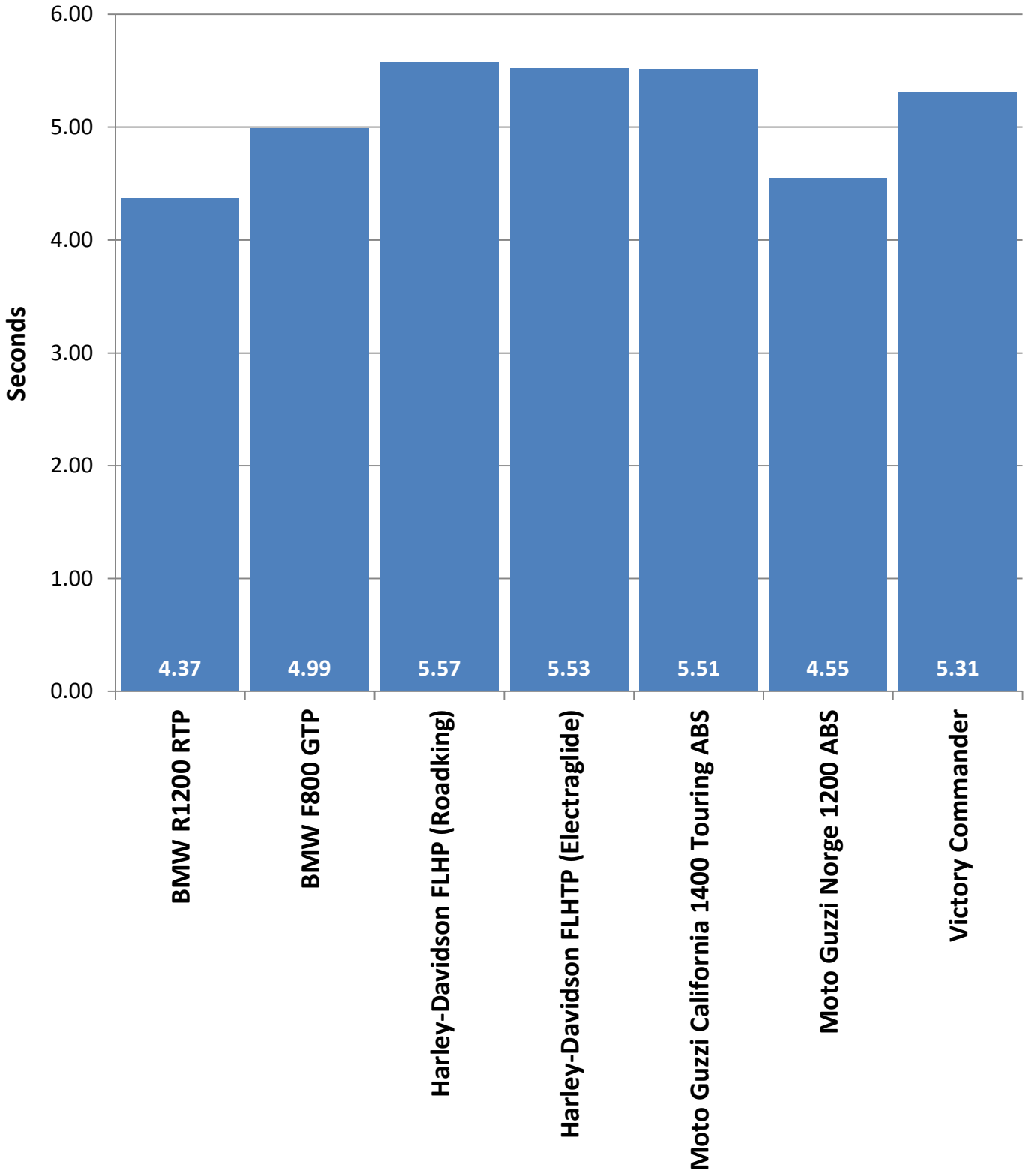
Top Speed Attained



2014 Motorcycle Acceleration Comparison

Acceleration Times

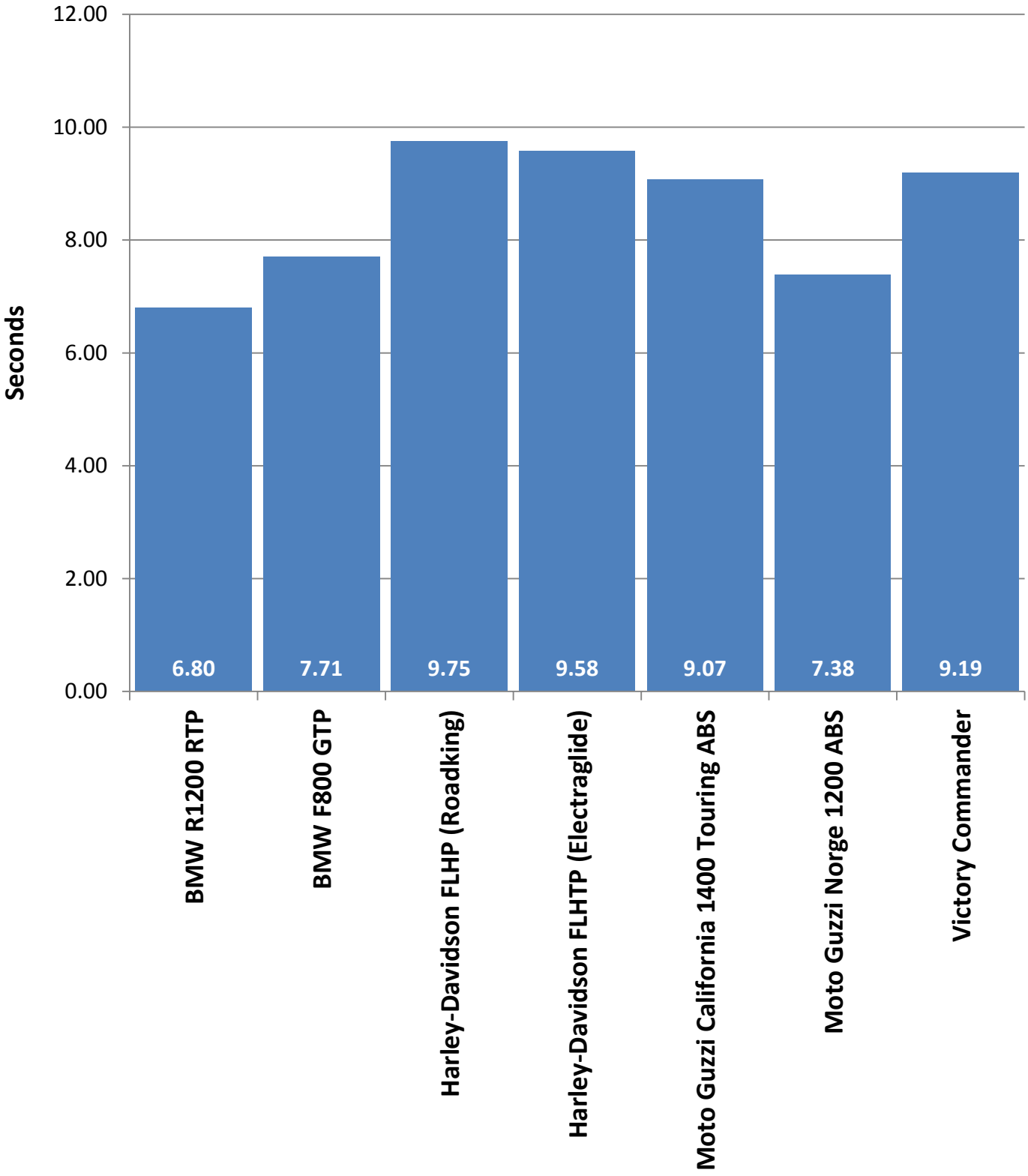
0-60 mph



2014 Motorcycle Acceleration Comparison

Acceleration Times

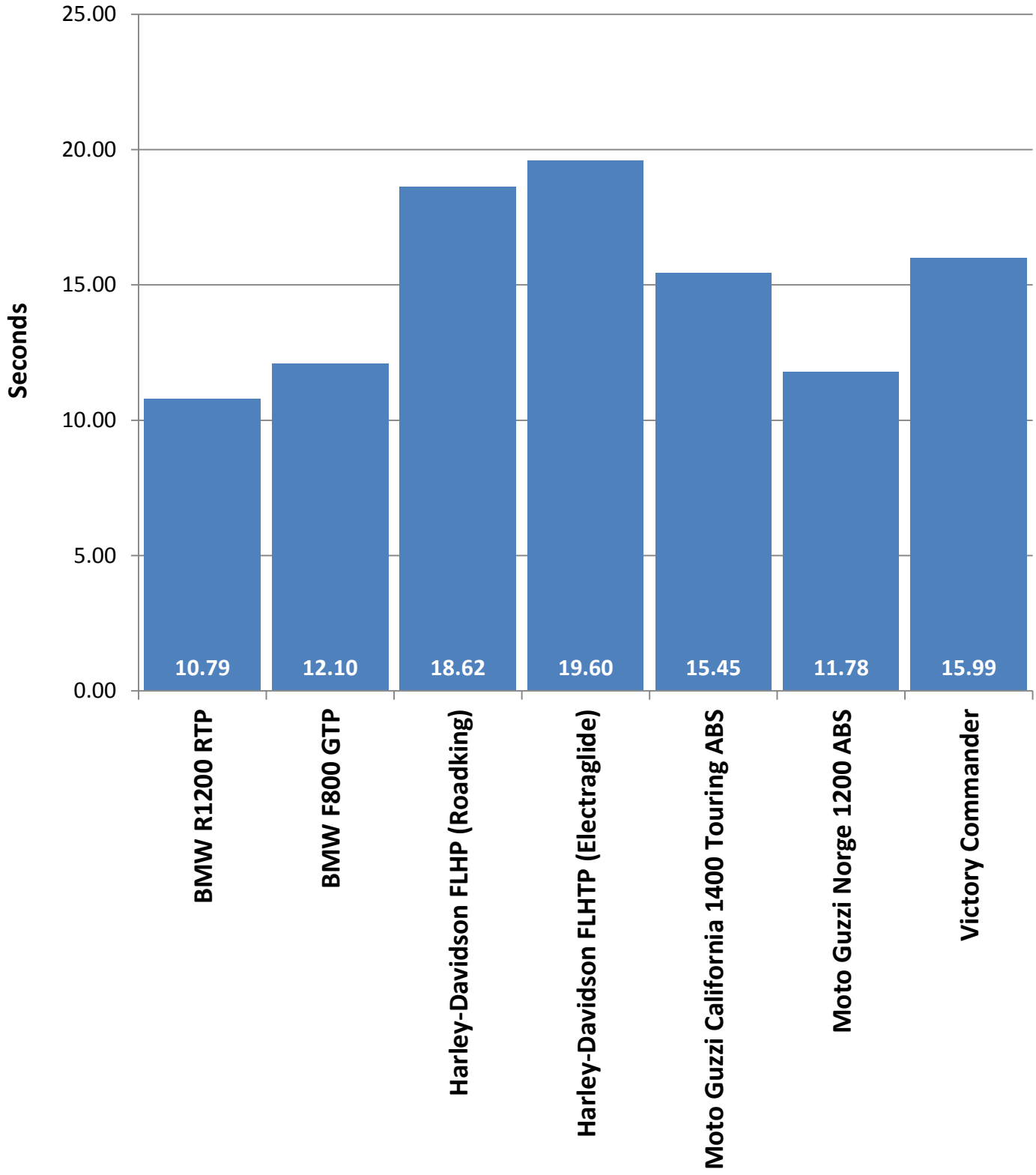
0-80 mph



2014 Motorcycle Acceleration Comparison

Acceleration Times

0-100 mph



BRAKE TESTING

BRAKE TEST OBJECTIVE

To determine the deceleration rate attained by each test motorcycle on twenty 60 – 0 mph full ABS maximum deceleration panic stops. Each motorcycle will be scored on the average deceleration rate it attains.

BRAKE TEST METHODOLOGY

Each motorcycle makes ten measured 60 – 0 mph full ABS maximum deceleration panic stops, at specific predetermined points. After a one-mile lap to cool the brakes, the entire sequence is repeated. The exact initial velocity at the beginning of each of the 60 – 0 mph decelerations, and the exact distance required to make each stop, is recorded by means of a Kistler CDS-GPS CGPSLA 100 hz SP3 puck & logging unit. The data resulting from the twenty total stops is used to calculate the average deceleration rate which is the motorcycle's score for this test.

DECELERATION RATE FORMULA

$$\text{Deceleration Rate (DR)} = \frac{\text{Initial Velocity*(IV) squared}}{\text{2 times Stopping Distance (SD)}} = \frac{(IV)^2}{2\,(SD)}$$

EXAMPLE:

Initial Velocity = 89.175 ft/s (60.8 mph x 1.4667*)
Stopping Distance = 171.4 ft.

$$DR = \frac{(IV)^2}{2(SD)} = \frac{(89.175)^2}{2(171.4)} = \frac{7952.24}{342.8} = 23.198 \text{ ft/s}^2$$

Once a motorcycle's average deceleration rate has been determined, it is possible to calculate the stopping distance from any given speed by utilizing the following formula:

Select a speed; translate that speed into feet per second; square the feet per second figure by multiplying it by itself; divide the resultant figure by 2; divide the remaining figure by the average deceleration rate of the motorcycle in question.

EXAMPLE:

60 mph = 88.002 ft/s x 88.002 = 7744.352 / 2 = 3872.176 / 23.198 ft/s^2 = 166.9 ft.

BRAKE TESTING

BMW R1200 RTP

TEST LOCATION: MSP Precision Drive Track	**DATE:** September 18, 2013	**BEGINNING TIME:** 11:40 a.m.

AIR TEMPERATURE: 69° F	**TRACK SURFACE TEMPERATURE:** 88° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.95 mph	149.06 feet	26.81 ft/s^2
2	59.87 mph	135.95 feet	28.36 ft/s^2
3	60.43 mph	146.50 feet	26.81 ft/s^2
4	60.33 mph	139.00 feet	28.16 ft/s^2
5	59.68 mph	142.56 feet	26.87 ft/s^2
6	60.17 mph	132.73 feet	29.34 ft/s^2
7	59.88 mph	136.88 feet	28.17 ft/s^2
8	59.23 mph	140.83 feet	26.80 ft/s^2
9	59.37 mph	135.03 feet	28.08 ft/s^2
10	59.98 mph	132.39 feet	29.22 ft/s^2
AVERAGE DECELERATION RATE:			**27.86 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.99 mph	139.17 feet	27.82 ft/s^2
2	60.98 mph	147.77 feet	27.06 ft/s^2
3	60.67 mph	146.78 feet	26.97 ft/s^2
4	60.67 mph	138.62 feet	28.56 ft/s^2
5	60.59 mph	145.33 feet	27.17 ft/s^2
6	59.62 mph	131.20 feet	29.14 ft/s^2
7	60.35 mph	138.89 feet	28.21 ft/s^2
8	61.32 mph	144.17 feet	28.05 ft/s^2
9	59.15 mph	130.35 feet	28.87 ft/s^2
10	60.37 mph	140.44 feet	27.91 ft/s^2
AVERAGE DECELERATION RATE:			**27.98 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**27.92 ft/s^2**

PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**138.7 feet**

Evidence of Severe Fading?	No
Motorcycle Stopped in Straight Line?	Yes
Motorcycle Stopped Within Correct Lane?	Yes

*****All Motorcycles Tested are Equipped with Anti-Lock Brakes*****

BRAKE TESTING

BMW F800 GTP

TEST LOCATION: MSP Precision Drive Track	**DATE:** September 18, 2013	**BEGINNING TIME:** 10:24 a.m.

AIR TEMPERATURE: 63° F	**TRACK SURFACE TEMPERATURE:** 74° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.33 mph	129.71feet	30.19 ft/s^2
2	60.99 mph	131.63 feet	30.39 ft/s^2
3	60.10 mph	127.72 feet	30.42 ft/s^2
4	61.40 mph	135.31 feet	29.97 ft/s^2
5	60.80 mph	135.07 feet	29.44 ft/s^2
6	59.61 mph	126.36 feet	30.25 ft/s^2
7	61.55 mph	136.58 feet	29.83 ft/s^2
8	60.55 mph	124.81 feet	31.60 ft/s^2
9	61.32 mph	136.83 feet	29.55 ft/s^2
10	61.59 mph	135.58 feet	30.09 ft/s^2
AVERAGE DECELERATION RATE:			**30.17 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.14 mph	130.77 feet	29.75 ft/s^2
2	61.22 mph	126.90 feet	31.76 ft/s^2
3	60.46 mph	130.47 feet	30.14 ft/s^2
4	59.73 mph	123.57 feet	31.05 ft/s^2
5	60.26 mph	129.67 feet	30.12 ft/s^2
6	60.21 mph	127.06 feet	30.69 ft/s^2
7	61.52 mph	138.21 feet	29.46 ft/s^2
8	60.54 mph	130.60 feet	30.18 ft/s^2
9	60.31 mph	135.75 feet	28.82 ft/s^2
10	60.25 mph	131.84 feet	29.62 ft/s^2
AVERAGE DECELERATION RATE:			**30.16 ft/s^2**

Phase II

OVERALL AVERAGE DECELERATION RATE:	**30.17 ft/s^2**

PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**128.3 feet**

Evidence of Severe Fading?	No
Motorcycle Stopped in Straight Line?	Yes
Motorcycle Stopped Within Correct Lane?	Yes

All Motorcycles Tested are Equipped with Anti-Lock Brakes*

BRAKE TESTING

Harley Davidson FLHP (Roadking)

TEST LOCATION: MSP Precision Drive Track	**DATE:** September 18, 2013	**BEGINNING TIME:** 9:47 a.m.

AIR TEMPERATURE: 61° F	**TRACK SURFACE TEMPERATURE:** 70° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	58.77 mph	138.27 feet	26.87 ft/s^2
2	60.09 mph	148.13 feet	26.22 ft/s^2
3	59.90 mph	144.10 feet	26.78 ft/s^2
4	59.51 mph	143.65 feet	26.52 ft/s^2
5	59.39 mph	144.94 feet	26.17 ft/s^2
6	59.41 mph	140.58 feet	27.00 ft/s^2
7	59.46 mph	144.65 feet	26.28 ft/s^2
8	60.45 mph	147.81 feet	26.59 ft/s^2
9	59.64 mph	145.24 feet	26.34 ft/s^2
10	59.41 mph	141.22 feet	26.88 ft/s^2
AVERAGE DECELERATION RATE:			**26.57 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.95 mph	145.26 feet	26.61 ft/s^2
2	59.46 mph	135.95 feet	27.97 ft/s^2
3	62.22 mph	154.90 feet	26.88 ft/s^2
4	58.94 mph	141.02 feet	26.50 ft/s^2
5	59.39 mph	139.11 feet	27.27 ft/s^2
6	60.10 mph	146.81 feet	26.47 ft/s^2
7	59.70 mph	145.48 feet	26.35 ft/s^2
8	60.79 mph	147.84 feet	26.88 ft/s^2
9	60.50 mph	146.94 feet	26.80 ft/s^2
10	60.19 mph	143.55 feet	27.15 ft/s^2
AVERAGE DECELERATION RATE:			**26.89 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**26.73 ft/s^2**
PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**144.9 feet**

Evidence of Severe Fading?	No
Motorcycle Stopped in Straight Line?	Yes
Motorcycle Stopped Within Correct Lane?	Yes

All Motorcycles Tested are Equipped with Anti-Lock Brakes*

BRAKE TESTING

Harley Davidson FLHTP (Electraglide)

TEST LOCATION: MSP Precision Drive Track	**DATE:** September 18, 2013	**BEGINNING TIME:** 12:46 p.m.

AIR TEMPERATURE: 72° F	**TRACK SURFACE TEMPERATURE:** 95° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.56 mph	146.73 feet	26.88 ft/s^2
2	60.37 mph	142.92 feet	27.43 ft/s^2
3	59.60 mph	141.67 feet	26.97 ft/s^2
4	60.80 mph	149.86 feet	26.53 ft/s^2
5	59.50 mph	139.54 feet	27.29 ft/s^2
6	60.30 mph	141.17 feet	27.70 ft/s^2
7	60.50 mph	150.33 feet	26.19 ft/s^2
8	60.79 mph	142.79 feet	27.84 ft/s^2
9	59.49 mph	140.67 feet	27.06 ft/s^2
10	61.11 mph	145.35 feet	27.63 ft/s^2
AVERAGE DECELERATION RATE:			**27.15 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.32 mph	147.24 feet	26.58 ft/s^2
2	59.94 mph	143.58 feet	26.91 ft/s^2
3	60.92 mph	153.69 feet	25.98 ft/s^2
4	61.29 mph	145.99 feet	27.67 ft/s^2
5	59.95 mph	147.12 feet	26.28 ft/s^2
6	61.04 mph	151.37 feet	26.48 ft/s^2
7	59.73 mph	138.92 feet	27.62 ft/s^2
8	60.54 mph	147.82 feet	26.67 ft/s^2
9	60.69 mph	147.03 feet	26.94 ft/s^2
10	59.92 mph	140.09 feet	27.56 ft/s^2
AVERAGE DECELERATION RATE:			**26.87 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**27.01 ft/s^2**
PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**143.4 feet**

Evidence of Severe Fading?	No
Motorcycle Stopped in Straight Line?	Yes
Motorcycle Stopped Within Correct Lane?	Yes

All Motorcycles Tested are Equipped with Anti-Lock Brakes*

BRAKE TESTING

Moto Guzzi California 1400 Touring ABS

TEST LOCATION: MSP Precision Drive Track	**DATE:** September 18, 2013	**BEGINNING TIME:** 9:05 a.m.

AIR TEMPERATURE: 57° F	**TRACK SURFACE TEMPERATURE:** 64° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.66 mph	140.88 feet	27.17 ft/s^2
2	60.80 mph	137.06 feet	29.01 ft/s^2
3	60.39 mph	141.21 feet	27.78 ft/s^2
4	58.80 mph	132.85 feet	27.99 ft/s^2
5	59.96 mph	135.87 feet	28.46 ft/s^2
6	61.15 mph	139.34 feet	28.86 ft/s^2
7	59.37 mph	135.78 feet	27.92 ft/s^2
8	61.55 mph	138.30 feet	29.47 ft/s^2
9	60.18 mph	136.55 feet	28.52 ft/s^2
10	59.54 mph	127.35 feet	29.95 ft/s^2
AVERAGE DECELERATION RATE:			**28.51 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.02 mph	132.38 feet	29.27 ft/s^2
2	60.65 mph	133.11 feet	29.72 ft/s^2
3	58.99 mph	120.83 feet	30.98 ft/s^2
4	60.06 mph	131.36 feet	29.53 ft/s^2
5	60.89 mph	133.28 feet	29.92 ft/s^2
6	60.86 mph	140.02 feet	28.45 ft/s^2
7	59.36 mph	125.45 feet	30.21 ft/s^2
8	59.83 mph	134.59 feet	28.61 ft/s^2
9	60.90 mph	131.92 feet	30.24 ft/s^2
10	59.58 mph	130.20 feet	29.32 ft/s^2
AVERAGE DECELERATION RATE:			**29.63 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**29.07 ft/s^2**

PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**133.2 feet**

Evidence of Severe Fading?	No
Motorcycle Stopped in Straight Line?	Yes
Motorcycle Stopped Within Correct Lane?	Yes

*****All Motorcycles Tested are Equipped with Anti-Lock Brakes*****

BRAKE TESTING

Moto Guzzi Norge 1200 ABS

TEST LOCATION: MSP Precision Drive Track	**DATE:** September 18, 2013	**BEGINNING TIME:** 12:14 p.m.

AIR TEMPERATURE: 71° F	**TRACK SURFACE TEMPERATURE:** 92° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.44 mph	131.34 feet	29.92 ft/s^2
2	61.22 mph	127.34 feet	31.66 ft/s^2
3	59.57 mph	129.22 feet	29.53 ft/s^2
4	61.08 mph	133.32 feet	30.09 ft/s^2
5	61.68 mph	135.76 feet	30.14 ft/s^2
6	59.93 mph	132.57 feet	29.14 ft/s^2
7	60.27 mph	132.57 feet	29.47 ft/s^2
8	60.56 mph	132.97 feet	29.67 ft/s^2
9	61.27 mph	137.81 feet	29.29 ft/s^2
10	60.05 mph	128.75 feet	30.12 ft/s^2
AVERAGE DECELERATION RATE:			**29.90 ft/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.62 mph	135.05 feet	29.27 ft/s^2
2	59.64 mph	132.06 feet	28.97 ft/s^2
3	60.74 mph	138.34 feet	28.68 ft/s^2
4	61.40 mph	136.66 feet	29.67 ft/s^2
5	60.63 mph	134.39 feet	29.42 ft/s^2
6	61.04 mph	132.26 feet	30.30 ft/s^2
7	58.49 mph	128.02 feet	28.74 ft/s^2
8	59.62 mph	130.81 feet	29.23 ft/s^2
9	61.87 mph	147.03 feet	28.00 ft/s^2
10	60.39 mph	132.03 feet	29.71 ft/s^2
AVERAGE DECELERATION RATE:			**29.20 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**29.55 ft/s^2**

PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**131.0 feet**

Evidence of Severe Fading?	No
Motorcycle Stopped in Straight Line?	Yes
Motorcycle Stopped Within Correct Lane?	Yes

*****All Motorcycles Tested are Equipped with Anti-Lock Brakes*****

BRAKE TESTING

Victory Commander

TEST LOCATION: MSP Precision Drive Track	**DATE:** September 18, 2013	**BEGINNING TIME:** 10:56 a.m.

AIR TEMPERATURE: 66° F	**TRACK SURFACE TEMPERATURE:** 83° F

Phase I

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	60.79 mph	162.12 feet	24.52 ft/s^2
2	60.75 mph	156.47 feet	25.37 ft/s^2
3	60.41 mph	155.34 feet	25.27 ft/s^2
4	60.84 mph	154.34 feet	25.80 ft/s^2
5	60.81 mph	165.29 feet	24.06 ft/s^2
6	60.08 mph	161.14 feet	24.09 ft/s^2
7	59.86 mph	160.57 feet	24.00 ft/s^2
8	60.15 mph	162.79 feet	23.91 ft/s^2
9	60.79 mph	159.37 feet	24.94 ft/s^2
10	60.68 mph	169.11 feet	23.41 ft/s^2
AVERAGE DECELERATION RATE:			**24.54 f/s^2**

(One cool down lap at 45 mph)

Phase II

(Ten 60 –0 mph full ABS maximum deceleration stops)

Stop #	Initial Velocity	Stopping Distance	Deceleration Rate
1	59.26 mph	158.46 feet	23.84 ft/s^2
2	58.90 mph	153.29 feet	24.34 ft/s^2
3	59.99 mph	164.75 feet	23.50 ft/s^2
4	60.39 mph	160.23 feet	24.48 ft/s^2
5	60.69 mph	165.98 feet	23.87 ft/s^2
6	61.09 mph	168.37 feet	23.84 ft/s^2
7	60.63 mph	166.36 feet	23.76 ft/s^2
8	60.28 mph	159.37 feet	24.52 ft/s^2
9	60.62 mph	171.55 feet	23.04 ft/s^2
10	60.60 mph	166.73 feet	23.69 ft/s^2
AVERAGE DECELERATION RATE:			**23.89 ft/s^2**

Phase III

OVERALL AVERAGE DECELERATION RATE:	**24.22 ft/s^2**

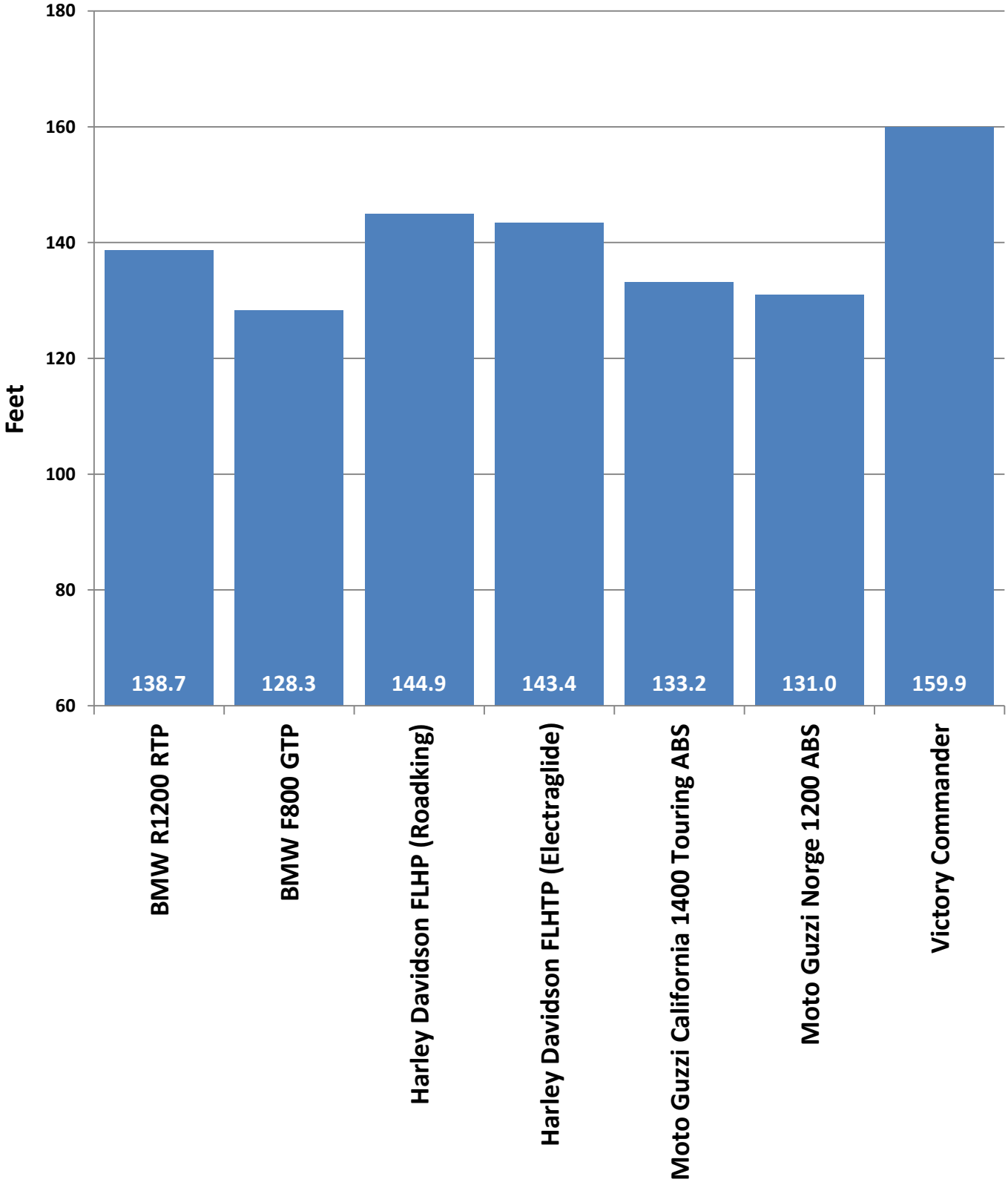
PROJECTED STOPPING DISTANCE FROM 60.0 mph:	**159.9 feet**

Evidence of Severe Fading?	No
Motorcycle Stopped in Straight Line?	Yes
Motorcycle Stopped Within Correct Lane?	Yes

*****All Motorcycles Tested are Equipped with Anti-Lock Brakes*****

2014 Motorcycle Brake Testing

Projected Stopping Distance



For Your Information

About the National Institute of Justice

A component of the Office of Justice Programs, NIJ is the research, development and evaluation agency of the U.S. Department of Justice. NIJ's mission is to advance scientific research, development and evaluation to enhance the administration of justice and public safety. NIJ's principal authorities are derived from the Omnibus Crime Control and Safe Streets Act of 1968, as amended (see 42 USC §§ 3721–3723).

The NIJ Director is appointed by the President and confirmed by the Senate. The Director establishes the Institute's objectives, guided by the priorities of the Office of Justice Programs, the U.S. Department of Justice, and the needs of the field. The Institute actively solicits the views of criminal justice and other professionals and researchers to inform its search for the knowledge and tools to guide policy and practice.

Strategic Goals
NIJ has seven strategic goals grouped into three categories:

Creating relevant knowledge and tools

1. Partner with state and local practitioners and policymakers to identify social science research and technology needs.

2. Create scientific, relevant and reliable knowledge — with a particular emphasis on terrorism, violent crime, drugs and crime, cost-effectiveness and community-based efforts — to enhance the administration of justice and public safety.

3. Develop affordable and effective tools and technologies to enhance the administration of justice and public safety.

Dissemination

4. Disseminate relevant knowledge and information to practitioners and policymakers in an understandable, timely and concise manner.

5. Act as an honest broker to identify the information, tools and technologies that respond to the needs of stakeholders.

Agency management

6. Practice fairness and openness in the research and development process.

7. Ensure professionalism, excellence, accountability, cost-effectiveness and integrity in the management and conduct of NIJ activities and programs.

Program Areas
In addressing these strategic challenges, the Institute is involved in the following program areas: crime control and prevention, including policing; drugs and crime; justice systems and offender behavior, including corrections; violence and victimization; communications and information technologies; critical incident response; investigative and forensic sciences, including DNA; less lethal technologies; officer protection; education and training technologies; testing and standards; technology assistance to law enforcement and corrections agencies; field testing of promising programs; and international crime control.

In addition to sponsoring research and development and technology assistance, NIJ evaluates programs, policies and technologies. NIJ communicates its research and evaluation findings through conferences and print and electronic media.

About the Law Enforcement and Corrections Standards and Testing Program

The Law Enforcement and Corrections Standards and Testing Program is sponsored by the Office of Science and Technology of the National Institute of Justice (NIJ), Office of Justice Programs, U.S. Department of Justice. The program responds to the mandate of the Justice System Improvement Act of 1979, which directed NIJ to encourage research and development to improve the criminal justice system and to disseminate the results to federal, state and local agencies.

The Law Enforcement and Corrections Standards and Testing Program is an applied research effort that determines the technological needs of justice system agencies, sets minimum performance standards for specific devices, tests commercially available equipment against those standards, and disseminates the standards and the test results to criminal justice agencies nationwide and internationally.

The program operates through the following:

- The **Law Enforcement and Corrections Technology Advisory Council** (LECTAC), consisting of nationally recognized criminal justice practitioners from federal, state and local agencies, assesses technological needs and sets priorities for research programs and items to be evaluated and tested.
- The **Office of Law Enforcement Standards** (OLES) at the National Institute of Standards and Technology develops voluntary national performance standards for compliance testing to ensure that individual items of equipment are suitable for use by criminal justice agencies. The equipment standards developed by OLES are based on laboratory evaluation of commercially available products in order to devise precise test methods that can be universally applied by any qualified testing laboratory and to establish minimum performance requirements for each attribute of a piece of equipment that is essential to how it functions. OLES-developed standards can serve as design criteria for manufacturers or as the basis for equipment evaluation. The application of the standards, which are highly technical in nature, is augmented through the publication of equipment performance reports and user guides. Individual jurisdictions may use the standards in their own laboratories to test equipment, have equipment tested on their behalf using the standards, or cite the standards in procurement specifications.
- The **National Law Enforcement and Corrections Technology Center** (NLECTC)-National, operated by a grantee, supervises a national compliance testing program conducted by independent laboratories. The standards developed by OLES serve as performance benchmarks against which commercial equipment is measured. In addition, NIJ has begun a new process for developing some standards using Special Technical Committees (STCs), which include practitioners, scientists and subject matter experts. OLES participates in the STC process. The facilities, personnel and testing capabilities of the independent laboratories are evaluated by OLES prior to testing each item of equipment. In addition, OLES helps NLECTC staff review and analyze data. Test results are published in consumer product reports designed to help justice system procurement officials make informed purchasing decisions.

Publications are available at no charge through NLECTC. Some documents are also available online through the Justice Technology Information Network (JUSTNET), the center's World Wide Web site. To request a document or additional information, call (800) 248-2742 or (301) 519-5069 or write:

National Law Enforcement and Corrections Technology Center-National
2277 Research Boulevard
Mail Stop 8J
Rockville, MD 20850
E-mail: asknlectc@nlectc.org
World Wide Web address: http://www.justnet.org

About the National Law Enforcement and Corrections Technology Center System

The National Law Enforcement and Corrections Technology Center (NLECTC) system recently completed a reorganization that will better enable the system to carry out its critical mission to assist state, major city and county, rural, tribal and border, as well as federal law enforcement, corrections and other criminal justice agencies in addressing their technology needs and challenges. Originally created in 1994 as a program of the National Institute of Justice's (NIJ's) Office of Science and Technology, the NLECTC system has realigned its outreach efforts into three new centers: the States, Major Cities and Counties Regional Center; the Small, Rural, Tribal and Border Regional Center; and the Alaska Regional Center.

The States, Major Cities and Counties Regional Center offers a resource and outreach mechanism for state, major city and county criminal justice system partners, with a mission of ensuring that larger criminal justice agencies (those having 50 or more sworn personnel) have unbiased access to a full range of relevant scientific and technology-related information. The Small, Rural, Tribal and Border Regional Center publicizes its programs and services to small, rural, tribal and border agencies across the country. The Alaska Regional Center serves as a conduit for agencies in Alaska.

The efforts of these centers complement those of NLECTC-National, which coordinates NIJ's Compliance Testing program and standards development efforts for a variety of equipment used in the public safety arena, and the Centers of Excellence (CoEs), which support NIJ's research, development, testing and evaluation (RDT&E) efforts in specific portfolio areas. The CoEs focus on the following topic areas: Communications Technologies; Electronic Crime Technology; Forensics Technology; Information and Sensor Systems; and Weapons and Protective Systems. The National Institute of Standards and Technology's Office of Law Enforcement Standards provides scientific and research support to these efforts.

As a whole, the NLECTC system provides:

- Scientific and technical support to NIJ's RDT&E projects.
- Support for the transfer and adoption of technology into practice by law enforcement and corrections agencies, courts and crime laboratories.
- Assistance in developing and disseminating equipment performance standards and technology guides.
- Assistance in the demonstration, testing and evaluation of criminal justice tools and technologies.
- Technology information and general and specialized technology assistance.
- Assistance in setting NIJ's research agenda by convening practitioner-based advisory groups to help identify criminal justice technology needs and gaps.

The NLECTC system supports NIJ's RDT&E process and goal of setting research priorities based on practitioner needs by sponsoring a series of Technology Working Groups and Constituent Advisory Groups, who provide input to the Law Enforcement and Corrections Technology Advisory Council. Together, these groups form a bridge between the criminal justice community and the NIJ Office of Science and Technology.

For more information, call (800) 248-2742, e-mail asknlectc@nlectc.org or visit http://www.justnet.org.

About the Office of Law Enforcement Standards

The Office of Law Enforcement Standards (OLES) was established as a matrix management organization in 1971 through a Memorandum of Understanding between the U.S. Departments of Justice and Commerce based on the recommendations of the President's Commission on Crime. OLES' mission is to apply science and technology to the needs of the criminal justice community, including law enforcement, corrections, forensic science and the fire service. While its major objective is to develop minimum performance standards, which are promulgated as voluntary national standards, OLES also undertakes studies leading to the publication of technical reports and user guides.

The areas of research investigated by OLES include clothing, communication systems, emergency equipment, investigative aids, protective equipment, security systems, vehicles, weapons, and analytical techniques and standard reference materials used by the forensic science community. The composition of OLES' projects varies depending on priorities of the criminal justice community at any given time and, as necessary, draws on the resources of the National Institute of Standards and Technology.

OLES assists law enforcement and criminal justice agencies in acquiring, on a cost-effective basis, the high-quality resources they need to do their jobs. To accomplish this, OLES:

- Develops methods for testing equipment performance and examining evidentiary materials.
- Develops standards for equipment and operating procedures.
- Develops standard reference materials.
- Performs other scientific and engineering research as required.

Since the program began in 1971, OLES has coordinated the development of standards, user guides and advisory reports on topics that range from performance parameters of police patrol vehicles, to performance reports on various speed-measuring devices, to soft body armor testing, to analytical procedures for developing DNA profiles.

The application of technology to enhance the efficiency and effectiveness of the criminal justice community continues to increase. The proper adoption of the products resulting from emerging technologies and the assessment of equipment performance, systems, methodologies, etc., used by criminal justice practitioners constitute critical issues having safety and legal ramifications. The consequences of inadequate equipment performance or inadequate test methods can range from inconvenient to catastrophic. In addition, these deficiencies can adversely affect the general population when they increase public safety costs, preclude arrest or result in evidence found to be inadmissible in court.