APPENDIX J

Energy Data

J.1

Existing Conditions Energy Calculations

Table 1. Summary of Annual Electricity Use During Operation

Electricity				
Parcel	**Address**	**Land Use**	**Units**	**Buildout**
4015-027-030	310 E. Florence Ave	Restaurant	kWh/yr	43,776
4015-027-031	300 E. Florence Ave	Restaurant	kWh/yr	173,645
4015-027-032	254 N. Market St	Restaurant	kWh/yr	168,100
4015-027-033	250 N. Market St	Auto Service	kWh/yr	371,800
4015-027-038	240 N. Market St	Shopping Center	kWh/yr	140,712
4015-027-040	230 N. Market St	Store	kWh/yr	253,854
4015-027-041	224 N. Market St	Store	kWh/yr	57,200
4015-027-049	222 N. Market St	Shopping Center	kWh/yr	291,720
4015-027-050	210 N. Market St	Shopping Center	kWh/yr	84,084
4021-010-015	150 S. Market St	Store	kWh/yr	189,561
4021-024-015	500 E. Manchester Blvd	Supermarket	kWh/yr	2,950,570
4021-024-015	510 E. Manchester Blvd	Gas Station	kWh/yr	1,707
4021-036-049	401 S. Prairie Ave	Office	kWh/yr	392,126
4024-008-015	923 S. Prairie Ave	Store	kWh/yr	111,471
4024-009-005	945 S. Prairie Ave	Office	kWh/yr	116,914
4024-009-007	1003 S. Prairie Ave	Office	kWh/yr	77,253
4024-009-015	1011 S. Prairie Ave	Office	kWh/yr	15,361
4024-009-033	1035 S. Prairie Ave	Shopping Center	kWh/yr	300,048
4024-009-028	1035 S. Prairie Ave	Restaurant	kWh/yr	144,242
		Total Building	kWh/yr	5,884,144
		Water	kWh/yr	605,070
		Total Electricty	**kWh/yr**	**6,489,214**

Table 2. Summary of Annual Natural Gas Use During Operation

Natural Gas				
Parcel		**Land Use**	**Units**	**Buildout**
4015-027-030	310 E. Florence Ave	Restaurant	kBTU/yr	311,184
4015-027-031	300 E. Florence Ave	Restaurant	kBTU/yr	1,234,360
4015-027-032	254 N. Market St	Restaurant	kBTU/yr	1,194,950
4015-027-033	250 N. Market St	Auto Service	kBTU/yr	919,600
4015-027-038	240 N. Market St	Shopping Center	kBTU/yr	24,600
4015-027-040	230 N. Market St	Store	kBTU/yr	44,380
4015-027-041	224 N. Market St	Store	kBTU/yr	10,000
4015-027-049	222 N. Market St	Shopping Center	kBTU/yr	51,000
4015-027-050	210 N. Market St	Shopping Center	kBTU/yr	14,700
4021-010-015	150 S. Market St	Store	kBTU/yr	33,140
4021-024-015	500 E. Manchester Blvd	Supermarket	kBTU/yr	1,570,020
4021-024-015	510 E. Manchester Blvd	Gas Station	kBTU/yr	4,222
4021-036-049	401 S. Prairie Ave	Office	kBTU/yr	256,185
4024-008-015	923 S. Prairie Ave	Store	kBTU/yr	19,488
4024-009-005	945 S. Prairie Ave	Office	kBTU/yr	76,383
4024-009-007	1003 S. Prairie Ave	Office	kBTU/yr	50,471
4024-009-015	1011 S. Prairie Ave	Office	kBTU/yr	10,036
4024-009-033	1035 S. Prairie Ave	Shopping Center	kBTU/yr	52,456
4024-009-028	1035 S. Prairie Ave	Restaurant	kBTU/yr	1,025,350
		Total Natural Gas	**kBTU/yr**	**6,902,525**

Table 3. Water by Land Use

"Regulatory Compliance"

		Adjusted Baseline		
Land Use	**Units**	**Indoor/Outdoor Use**	**Indoor Use**	**Outdoor Use**
Combined	Mgal	34.93877/13.51328	34.93877	13.51328

Water and Wastewater Electricity Intensity (kWh/gallon)

Supply Water	0.009727
Treat Water	0.000111
Distribute Water	0.001272
Wastewater Treatment	0.001911

Source: CalEEMod User's Guide, Appendix D, Table 9.2 Los Angeles County - Los Angeles-South Coast

Indoor Water Factor	0.013021	kWh/gallon (supply, treat, distribute, wastewater treatment)
Outdoor Water Factor	0.01111	kWh/gallon (supply, treat, and distribute)

Notes:

*See **Appendix 4.2.1** : Air Quality and Health Risk Assessment Technical Report for the Inglewood Transit Connector Project, for CalEEMod output sheets. Electricity and Natural Gas for the uses is total operational usage. Electricity, natural gas, and mobile usage was calculated from CalEEMod. Indoor water factor used for entire Project Site for conservative analysis.*

J.2

Adjusted Baseline Energy Calculations

Table 1. Summary of Annual Electricity Use During Operation

Electricity		
Land Use	**Units**	**Buildout**
General Office	kWh/yr	6,519,340
Apartments	kWh/yr	1,248,240
Retail	kWh/yr	5,926,840
Total Building	kWh/yr	13,694,420
Water	kWh/yr	2,813,125
Total Electricty	**kWh/yr**	**16,507,545**

Table 2. Summary of Annual Natural Gas Use During Operation

Natural Gas		
Land Use	**Units**	**Buildout**
General Office	kBTU/yr	4,259,240
Apartments	kBTU/yr	3,588,220
Retail	kBTU/yr	1,036,160
Total Natural Gas	**kBTU/yr**	**8,883,620**

Table 3. Water by Land Use "Regulatory Compliance"

		Adjusted Baseline		
Land Use	**Units**	**Indoor/Outdoor Use**	**Indoor Use**	**Outdoor Use**
Combined	Mgal	141.66/87.18	141.66	87.18

Water and Wastewater Electricity Intensity (kWh/gallon)

Supply Water	0.009727	
Treat Water	0.000111	
Distribute Water	0.001272	
Wastewater Treatment	0.001911	

Source: CalEEMod User's Guide, Appendix D, Table 9.2 Los Angeles County - Los Angeles-South Coast

Indoor Water Factor	0.013021	kWh/gallon (supply, treat, distribute, wastewater treatment)
Outdoor Water Factor	0.01111	kWh/gallon (supply, treat, and distribute)

Notes:

*See **Appendix 4.2.1** : Air Quality and Health Risk Assessment Technical Report for the Inglewood Transit Connector Project, for CalEEMod output sheets.*
Electricity and Natural Gas for the uses is total operational usage. Electricity, natural gas, and mobile usage was calculated from CalEEMod. Indoor water factor used for entire Project Site for conservative analysis.

J.3

Project Construction Energy Calculations

Table 1. Water Usage for Control of Fugitive Dust During Construction

Phase Name	Acres	Gallons for Project	Electricity (kWh)
ITC Construction	17.8	**9,783,592**	**95,165.0**

Construction Schedule

182 days for Phase 1

Water Usage

3,020 gallons per acre per day

Source: Air & Waste Management Association, Air Pollution Engineering Manual, 1992 Edition

Supply Water Electricity Intensity

0.009727 kWh/gallons (CalEEMod default for South Coast Air Basin)

ITC Construction Trailer

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	5.00	1000sqft	0.11	5,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	8			**Operational Year**	2024
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Trailer usage only.

Off-road Equipment - Trailer usage only.

Table Name	Column Name	Default Value	New Value
tblFleetMix	HHD	0.03	0.03
tblFleetMix	LDA	0.55	0.55
tblFleetMix	LDT1	0.04	0.04
tblFleetMix	LDT2	0.21	0.20

tblFleetMix	LHD1	0.02	0.02
tblFleetMix	LHD2	6.2530e-003	6.1960e-003
tblFleetMix	MCY	5.2170e-003	5.1420e-003
tblFleetMix	MDV	0.12	0.12
tblFleetMix	MH	8.5000e-004	8.7600e-004
tblFleetMix	MHD	0.02	0.02
tblFleetMix	OBUS	2.5600e-003	2.5150e-003
tblFleetMix	SBUS	6.9600e-004	6.8700e-004
tblFleetMix	UBUS	2.0710e-003	2.2010e-003
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	1.00	0.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblTripsAndVMT	WorkerTripNumber	0.00	10.00
tblVehicleEF	HHD	0.47	0.62
tblVehicleEF	HHD	0.09	0.09
tblVehicleEF	HHD	0.07	0.08
tblVehicleEF	HHD	1.60	2.47
tblVehicleEF	HHD	1.08	1.15
tblVehicleEF	HHD	3.29	3.30
tblVehicleEF	HHD	4,415.48	4,690.45
tblVehicleEF	HHD	1,567.39	1,639.83
tblVehicleEF	HHD	10.70	10.54
tblVehicleEF	HHD	13.98	20.39
tblVehicleEF	HHD	2.11	3.81

tblVehicleEF	HHD	19.48	19.54
tblVehicleEF	HHD	8.9530e-003	0.01
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	6.2770e-003	0.02
tblVehicleEF	HHD	9.2000e-005	8.7000e-005
tblVehicleEF	HHD	8.5660e-003	0.01
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8420e-003	8.8380e-003
tblVehicleEF	HHD	6.0050e-003	0.01
tblVehicleEF	HHD	8.5000e-005	8.0000e-005
tblVehicleEF	HHD	9.9000e-005	1.0500e-004
tblVehicleEF	HHD	4.3090e-003	4.6110e-003
tblVehicleEF	HHD	0.41	0.62
tblVehicleEF	HHD	7.6000e-005	7.9000e-005
tblVehicleEF	HHD	0.09	0.15
tblVehicleEF	HHD	3.5500e-004	3.9500e-004
tblVehicleEF	HHD	0.07	0.08
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	0.01	0.02
tblVehicleEF	HHD	1.6100e-004	1.6000e-004
tblVehicleEF	HHD	9.9000e-005	1.0500e-004
tblVehicleEF	HHD	4.3090e-003	4.6110e-003
tblVehicleEF	HHD	0.48	0.72
tblVehicleEF	HHD	7.6000e-005	7.9000e-005
tblVehicleEF	HHD	0.20	0.25
tblVehicleEF	HHD	3.5500e-004	3.9500e-004

tblVehicleEF	HHD	0.08	0.09
tblVehicleEF	HHD	0.44	0.58
tblVehicleEF	HHD	0.09	0.10
tblVehicleEF	HHD	0.06	0.07
tblVehicleEF	HHD	1.17	1.80
tblVehicleEF	HHD	1.08	1.16
tblVehicleEF	HHD	3.12	3.13
tblVehicleEF	HHD	4,677.81	4,968.94
tblVehicleEF	HHD	1,567.39	1,639.83
tblVehicleEF	HHD	10.70	10.54
tblVehicleEF	HHD	14.43	21.04
tblVehicleEF	HHD	2.00	3.60
tblVehicleEF	HHD	19.47	19.53
tblVehicleEF	HHD	7.5480e-003	0.01
tblVehicleEF	HHD	0.06	0.06
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	6.2770e-003	0.02
tblVehicleEF	HHD	9.2000e-005	8.7000e-005
tblVehicleEF	HHD	7.2220e-003	0.01
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8420e-003	8.8380e-003
tblVehicleEF	HHD	6.0050e-003	0.01
tblVehicleEF	HHD	8.5000e-005	8.0000e-005
tblVehicleEF	HHD	1.5000e-004	1.6000e-004
tblVehicleEF	HHD	4.4160e-003	4.7280e-003
tblVehicleEF	HHD	0.38	0.58
tblVehicleEF	HHD	1.0700e-004	1.1400e-004

tblVehicleEF	HHD	0.09	0.15
tblVehicleEF	HHD	3.4300e-004	3.8400e-004
tblVehicleEF	HHD	0.07	0.08
tblVehicleEF	HHD	0.04	0.05
tblVehicleEF	HHD	0.01	0.02
tblVehicleEF	HHD	1.5800e-004	1.5700e-004
tblVehicleEF	HHD	1.5000e-004	1.6000e-004
tblVehicleEF	HHD	4.4160e-003	4.7280e-003
tblVehicleEF	HHD	0.45	0.68
tblVehicleEF	HHD	1.0700e-004	1.1400e-004
tblVehicleEF	HHD	0.20	0.25
tblVehicleEF	HHD	3.4300e-004	3.8400e-004
tblVehicleEF	HHD	0.07	0.08
tblVehicleEF	HHD	0.50	0.67
tblVehicleEF	HHD	0.09	0.09
tblVehicleEF	HHD	0.07	0.08
tblVehicleEF	HHD	2.21	3.41
tblVehicleEF	HHD	1.08	1.15
tblVehicleEF	HHD	3.32	3.33
tblVehicleEF	HHD	4,053.22	4,305.87
tblVehicleEF	HHD	1,567.39	1,639.83
tblVehicleEF	HHD	10.70	10.54
tblVehicleEF	HHD	13.36	19.48
tblVehicleEF	HHD	2.08	3.75
tblVehicleEF	HHD	19.48	19.55
tblVehicleEF	HHD	0.01	0.02
tblVehicleEF	HHD	0.06	0.06

tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	6.2770e-003	0.02
tblVehicleEF	HHD	9.2000e-005	8.7000e-005
tblVehicleEF	HHD	0.01	0.02
tblVehicleEF	HHD	0.03	0.03
tblVehicleEF	HHD	8.8420e-003	8.8380e-003
tblVehicleEF	HHD	6.0050e-003	0.01
tblVehicleEF	HHD	8.5000e-005	8.0000e-005
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tblVehicleEF	HHD	4.5590e-003	4.9260e-003
tblVehicleEF	HHD	0.44	0.66
tblVehicleEF	HHD	7.3000e-005	7.7000e-005
tblVehicleEF	HHD	0.09	0.15
tblVehicleEF	HHD	3.8700e-004	4.2900e-004
tblVehicleEF	HHD	0.07	0.08
tblVehicleEF	HHD	0.04	0.04
tblVehicleEF	HHD	0.01	0.02
tblVehicleEF	HHD	1.6100e-004	1.6000e-004
tblVehicleEF	HHD	9.6000e-005	1.0300e-004
tblVehicleEF	HHD	4.5590e-003	4.9260e-003
tblVehicleEF	HHD	0.52	0.78
tblVehicleEF	HHD	7.3000e-005	7.7000e-005
tblVehicleEF	HHD	0.20	0.25
tblVehicleEF	HHD	3.8700e-004	4.2900e-004
tblVehicleEF	HHD	0.08	0.09
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tblVehicleEF	LDA	4.1600e-003	5.4040e-003

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tblVehicleEF	LDA	0.05	0.07
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tblVehicleEF	LDA	2.0400e-003	2.0830e-003
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.09	0.10
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.06	0.07
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tblVehicleEF	LDA	0.09	0.10
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.04	0.04
tblVehicleEF	LDA	0.06	0.08
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tblVehicleEF	LDA	0.63	0.72

tblVehicleEF	LDA	0.81	0.98
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tblVehicleEF	LDA	0.05	0.06
tblVehicleEF	LDA	2.0900e-003	2.1700e-003
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tblVehicleEF	LDA	1.9260e-003	2.0000e-003
tblVehicleEF	LDA	2.0400e-003	2.0830e-003
tblVehicleEF	LDA	0.05	0.06
tblVehicleEF	LDA	0.09	0.11
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.05	0.06
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tblVehicleEF	LDA	0.05	0.06
tblVehicleEF	LDA	0.09	0.11
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tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.05	0.07
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tblVehicleEF	LDA	4.2560e-003	5.5300e-003
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tblVehicleEF	LDA	0.98	1.19

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tblVehicleEF	LDA	52.79	57.08
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.06	0.07
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tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.10	0.11
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.01	0.01
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.06	0.07
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tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.10	0.11
tblVehicleEF	LDA	0.03	0.04
tblVehicleEF	LDA	0.02	0.02
tblVehicleEF	LDA	0.04	0.05
tblVehicleEF	LDA	0.06	0.08
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tblVehicleEF	LDT1	0.01	0.01
tblVehicleEF	LDT1	1.40	1.68
tblVehicleEF	LDT1	2.25	2.78
tblVehicleEF	LDT1	322.00	341.15

tblVehicleEF	LDT1	65.45	69.44
tblVehicleEF	LDT1	0.13	0.16
tblVehicleEF	LDT1	0.13	0.16
tblVehicleEF	LDT1	3.2340e-003	3.5390e-003
tblVehicleEF	LDT1	3.1500e-003	3.4320e-003
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tblVehicleEF	LDT1	0.23	0.26
tblVehicleEF	LDT1	0.09	0.11
tblVehicleEF	LDT1	0.03	0.04
tblVehicleEF	LDT1	0.16	0.17
tblVehicleEF	LDT1	0.15	0.19
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tblVehicleEF	LDT1	0.23	0.26
tblVehicleEF	LDT1	0.09	0.11
tblVehicleEF	LDT1	0.05	0.06
tblVehicleEF	LDT1	0.16	0.17
tblVehicleEF	LDT1	0.16	0.21
tblVehicleEF	LDT1	0.01	0.02
tblVehicleEF	LDT1	9.8770e-003	0.01
tblVehicleEF	LDT1	1.52	1.82
tblVehicleEF	LDT1	1.91	2.36
tblVehicleEF	LDT1	336.08	356.02
tblVehicleEF	LDT1	65.45	69.44

tblVehicleEF	LDT1	0.11	0.14
tblVehicleEF	LDT1	0.12	0.15
tblVehicleEF	LDT1	3.2340e-003	3.5390e-003
tblVehicleEF	LDT1	3.1500e-003	3.4320e-003
tblVehicleEF	LDT1	2.9770e-003	3.2590e-003
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tblVehicleEF	LDT1	0.13	0.15
tblVehicleEF	LDT1	0.03	0.04
tblVehicleEF	LDT1	0.14	0.16
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tblVehicleEF	LDT1	0.17	0.20
tblVehicleEF	LDT1	0.24	0.28
tblVehicleEF	LDT1	0.13	0.15
tblVehicleEF	LDT1	0.05	0.06
tblVehicleEF	LDT1	0.14	0.16
tblVehicleEF	LDT1	0.15	0.18
tblVehicleEF	LDT1	0.01	0.02
tblVehicleEF	LDT1	0.01	0.01
tblVehicleEF	LDT1	1.36	1.63
tblVehicleEF	LDT1	2.32	2.87
tblVehicleEF	LDT1	316.82	335.69
tblVehicleEF	LDT1	65.45	69.44
tblVehicleEF	LDT1	0.13	0.15

tblVehicleEF	LDT1	0.13	0.16
tblVehicleEF	LDT1	3.2340e-003	3.5390e-003
tblVehicleEF	LDT1	3.1500e-003	3.4320e-003
tblVehicleEF	LDT1	2.9770e-003	3.2590e-003
tblVehicleEF	LDT1	2.8970e-003	3.1560e-003
tblVehicleEF	LDT1	0.11	0.13
tblVehicleEF	LDT1	0.26	0.30
tblVehicleEF	LDT1	0.09	0.10
tblVehicleEF	LDT1	0.03	0.04
tblVehicleEF	LDT1	0.18	0.20
tblVehicleEF	LDT1	0.15	0.20
tblVehicleEF	LDT1	3.1850e-003	3.3780e-003
tblVehicleEF	LDT1	6.9500e-004	7.4500e-004
tblVehicleEF	LDT1	0.11	0.13
tblVehicleEF	LDT1	0.26	0.30
tblVehicleEF	LDT1	0.09	0.10
tblVehicleEF	LDT1	0.04	0.06
tblVehicleEF	LDT1	0.18	0.20
tblVehicleEF	LDT1	0.17	0.21
tblVehicleEF	LDT2	6.1600e-003	7.2180e-003
tblVehicleEF	LDT2	5.0900e-003	6.3970e-003
tblVehicleEF	LDT2	0.76	0.84
tblVehicleEF	LDT2	1.14	1.35
tblVehicleEF	LDT2	357.41	381.91
tblVehicleEF	LDT2	72.80	78.07
tblVehicleEF	LDT2	0.07	0.08
tblVehicleEF	LDT2	0.08	0.11

tblVehicleEF	LDT2	2.1810e-003	2.1510e-003
tblVehicleEF	LDT2	2.3970e-003	2.3580e-003
tblVehicleEF	LDT2	2.0060e-003	1.9790e-003
tblVehicleEF	LDT2	2.2040e-003	2.1690e-003
tblVehicleEF	LDT2	0.04	0.04
tblVehicleEF	LDT2	0.09	0.10
tblVehicleEF	LDT2	0.04	0.05
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.07	0.09
tblVehicleEF	LDT2	3.5800e-003	3.8260e-003
tblVehicleEF	LDT2	7.4700e-004	8.0300e-004
tblVehicleEF	LDT2	0.04	0.04
tblVehicleEF	LDT2	0.09	0.10
tblVehicleEF	LDT2	0.04	0.05
tblVehicleEF	LDT2	0.02	0.03
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.08	0.09
tblVehicleEF	LDT2	6.5370e-003	7.6530e-003
tblVehicleEF	LDT2	4.5360e-003	5.6920e-003
tblVehicleEF	LDT2	0.83	0.92
tblVehicleEF	LDT2	0.98	1.15
tblVehicleEF	LDT2	373.41	399.04
tblVehicleEF	LDT2	72.80	78.07
tblVehicleEF	LDT2	0.06	0.07
tblVehicleEF	LDT2	0.08	0.10
tblVehicleEF	LDT2	2.1810e-003	2.1510e-003

tblVehicleEF	LDT2	2.3970e-003	2.3580e-003
tblVehicleEF	LDT2	2.0060e-003	1.9790e-003
tblVehicleEF	LDT2	2.2040e-003	2.1690e-003
tblVehicleEF	LDT2	0.06	0.07
tblVehicleEF	LDT2	0.09	0.10
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.02	0.02
tblVehicleEF	LDT2	0.05	0.06
tblVehicleEF	LDT2	0.06	0.08
tblVehicleEF	LDT2	3.7410e-003	3.9980e-003
tblVehicleEF	LDT2	7.4400e-004	8.0000e-004
tblVehicleEF	LDT2	0.06	0.07
tblVehicleEF	LDT2	0.09	0.10
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.02	0.03
tblVehicleEF	LDT2	0.05	0.06
tblVehicleEF	LDT2	0.07	0.08
tblVehicleEF	LDT2	6.0370e-003	7.0750e-003
tblVehicleEF	LDT2	5.2090e-003	6.5470e-003
tblVehicleEF	LDT2	0.73	0.81
tblVehicleEF	LDT2	1.18	1.39
tblVehicleEF	LDT2	351.53	375.62
tblVehicleEF	LDT2	72.80	78.07
tblVehicleEF	LDT2	0.07	0.08
tblVehicleEF	LDT2	0.08	0.11
tblVehicleEF	LDT2	2.1810e-003	2.1510e-003
tblVehicleEF	LDT2	2.3970e-003	2.3580e-003

tblVehicleEF	LDT2	2.0060e-003	1.9790e-003
tblVehicleEF	LDT2	2.2040e-003	2.1690e-003
tblVehicleEF	LDT2	0.04	0.04
tblVehicleEF	LDT2	0.10	0.11
tblVehicleEF	LDT2	0.04	0.04
tblVehicleEF	LDT2	0.01	0.02
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.07	0.09
tblVehicleEF	LDT2	3.5210e-003	3.7630e-003
tblVehicleEF	LDT2	7.4800e-004	8.0400e-004
tblVehicleEF	LDT2	0.04	0.04
tblVehicleEF	LDT2	0.10	0.11
tblVehicleEF	LDT2	0.04	0.04
tblVehicleEF	LDT2	0.02	0.03
tblVehicleEF	LDT2	0.07	0.07
tblVehicleEF	LDT2	0.08	0.10
tblVehicleEF	LHD1	4.9880e-003	5.5970e-003
tblVehicleEF	LHD1	9.2560e-003	0.01
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	0.14	0.15
tblVehicleEF	LHD1	0.66	0.84
tblVehicleEF	LHD1	2.37	2.79
tblVehicleEF	LHD1	8.95	8.92
tblVehicleEF	LHD1	588.36	603.81
tblVehicleEF	LHD1	31.02	33.34
tblVehicleEF	LHD1	0.07	0.07
tblVehicleEF	LHD1	0.78	0.95

tblVehicleEF	LHD1	0.89	1.01
tblVehicleEF	LHD1	8.3700e-004	8.2600e-004
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	8.5610e-003	9.1270e-003
tblVehicleEF	LHD1	8.8500e-004	1.0140e-003
tblVehicleEF	LHD1	8.0100e-004	7.9000e-004
tblVehicleEF	LHD1	2.5540e-003	2.5160e-003
tblVehicleEF	LHD1	8.1660e-003	8.7050e-003
tblVehicleEF	LHD1	8.1400e-004	9.3300e-004
tblVehicleEF	LHD1	2.7900e-003	3.1460e-003
tblVehicleEF	LHD1	0.10	0.10
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.7340e-003	1.9140e-003
tblVehicleEF	LHD1	0.06	0.06
tblVehicleEF	LHD1	0.29	0.31
tblVehicleEF	LHD1	0.22	0.27
tblVehicleEF	LHD1	8.9000e-005	9.0000e-005
tblVehicleEF	LHD1	5.7670e-003	5.9300e-003
tblVehicleEF	LHD1	3.5400e-004	3.8500e-004
tblVehicleEF	LHD1	2.7900e-003	3.1460e-003
tblVehicleEF	LHD1	0.10	0.10
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.7340e-003	1.9140e-003
tblVehicleEF	LHD1	0.07	0.08
tblVehicleEF	LHD1	0.29	0.31
tblVehicleEF	LHD1	0.24	0.29
tblVehicleEF	LHD1	4.9880e-003	5.5970e-003

tblVehicleEF	LHD1	9.4510e-003	0.01
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	0.14	0.15
tblVehicleEF	LHD1	0.67	0.85
tblVehicleEF	LHD1	2.26	2.66
tblVehicleEF	LHD1	8.95	8.92
tblVehicleEF	LHD1	588.36	603.81
tblVehicleEF	LHD1	31.02	33.34
tblVehicleEF	LHD1	0.07	0.07
tblVehicleEF	LHD1	0.73	0.89
tblVehicleEF	LHD1	0.85	0.96
tblVehicleEF	LHD1	8.3700e-004	8.2600e-004
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	8.5610e-003	9.1270e-003
tblVehicleEF	LHD1	8.8500e-004	1.0140e-003
tblVehicleEF	LHD1	8.0100e-004	7.9000e-004
tblVehicleEF	LHD1	2.5540e-003	2.5160e-003
tblVehicleEF	LHD1	8.1660e-003	8.7050e-003
tblVehicleEF	LHD1	8.1400e-004	9.3300e-004
tblVehicleEF	LHD1	4.1640e-003	4.7100e-003
tblVehicleEF	LHD1	0.10	0.11
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	2.4160e-003	2.6900e-003
tblVehicleEF	LHD1	0.06	0.06
tblVehicleEF	LHD1	0.28	0.30
tblVehicleEF	LHD1	0.21	0.26
tblVehicleEF	LHD1	8.9000e-005	9.0000e-005

tblVehicleEF	LHD1	5.7670e-003	5.9310e-003
tblVehicleEF	LHD1	3.5200e-004	3.8300e-004
tblVehicleEF	LHD1	4.1640e-003	4.7100e-003
tblVehicleEF	LHD1	0.10	0.11
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	2.4160e-003	2.6900e-003
tblVehicleEF	LHD1	0.07	0.08
tblVehicleEF	LHD1	0.28	0.30
tblVehicleEF	LHD1	0.23	0.28
tblVehicleEF	LHD1	4.9880e-003	5.5970e-003
tblVehicleEF	LHD1	9.2060e-003	0.01
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	0.14	0.15
tblVehicleEF	LHD1	0.66	0.83
tblVehicleEF	LHD1	2.39	2.81
tblVehicleEF	LHD1	8.95	8.92
tblVehicleEF	LHD1	588.36	603.81
tblVehicleEF	LHD1	31.02	33.34
tblVehicleEF	LHD1	0.07	0.07
tblVehicleEF	LHD1	0.76	0.94
tblVehicleEF	LHD1	0.89	1.01
tblVehicleEF	LHD1	8.3700e-004	8.2600e-004
tblVehicleEF	LHD1	0.01	0.01
tblVehicleEF	LHD1	8.5610e-003	9.1270e-003
tblVehicleEF	LHD1	8.8500e-004	1.0140e-003
tblVehicleEF	LHD1	8.0100e-004	7.9000e-004
tblVehicleEF	LHD1	2.5540e-003	2.5160e-003

tblVehicleEF	LHD1	8.1660e-003	8.7050e-003
tblVehicleEF	LHD1	8.1400e-004	9.3300e-004
tblVehicleEF	LHD1	2.9050e-003	3.3080e-003
tblVehicleEF	LHD1	0.11	0.12
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.7020e-003	1.8850e-003
tblVehicleEF	LHD1	0.06	0.06
tblVehicleEF	LHD1	0.31	0.33
tblVehicleEF	LHD1	0.22	0.27
tblVehicleEF	LHD1	8.9000e-005	9.0000e-005
tblVehicleEF	LHD1	5.7670e-003	5.9300e-003
tblVehicleEF	LHD1	3.5400e-004	3.8600e-004
tblVehicleEF	LHD1	2.9050e-003	3.3080e-003
tblVehicleEF	LHD1	0.11	0.12
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.7020e-003	1.8850e-003
tblVehicleEF	LHD1	0.07	0.08
tblVehicleEF	LHD1	0.31	0.33
tblVehicleEF	LHD1	0.24	0.29
tblVehicleEF	LHD2	3.5180e-003	4.0020e-003
tblVehicleEF	LHD2	3.4110e-003	4.2980e-003
tblVehicleEF	LHD2	6.5620e-003	8.5190e-003
tblVehicleEF	LHD2	0.13	0.13
tblVehicleEF	LHD2	0.28	0.34
tblVehicleEF	LHD2	1.17	1.37
tblVehicleEF	LHD2	13.57	13.57
tblVehicleEF	LHD2	605.98	617.83

tblVehicleEF	LHD2	26.15	27.88
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.46	0.65
tblVehicleEF	LHD2	0.46	0.55
tblVehicleEF	LHD2	1.1260e-003	1.1620e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	8.0770e-003	8.8510e-003
tblVehicleEF	LHD2	4.2100e-004	4.6900e-004
tblVehicleEF	LHD2	1.0770e-003	1.1110e-003
tblVehicleEF	LHD2	2.6710e-003	2.6540e-003
tblVehicleEF	LHD2	7.7140e-003	8.4540e-003
tblVehicleEF	LHD2	3.8700e-004	4.3100e-004
tblVehicleEF	LHD2	9.3900e-004	1.1380e-003
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	6.4000e-004	7.4500e-004
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	0.07	0.08
tblVehicleEF	LHD2	0.09	0.11
tblVehicleEF	LHD2	5.9000e-003	6.0210e-003
tblVehicleEF	LHD2	2.8200e-004	3.0400e-004
tblVehicleEF	LHD2	9.3900e-004	1.1380e-003
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	6.4000e-004	7.4500e-004
tblVehicleEF	LHD2	0.05	0.05
tblVehicleEF	LHD2	0.07	0.08

tblVehicleEF	LHD2	0.10	0.13
tblVehicleEF	LHD2	3.5180e-003	4.0020e-003
tblVehicleEF	LHD2	3.4510e-003	4.3570e-003
tblVehicleEF	LHD2	6.3490e-003	8.2260e-003
tblVehicleEF	LHD2	0.13	0.13
tblVehicleEF	LHD2	0.28	0.35
tblVehicleEF	LHD2	1.12	1.31
tblVehicleEF	LHD2	13.57	13.57
tblVehicleEF	LHD2	605.98	617.83
tblVehicleEF	LHD2	26.15	27.88
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.44	0.61
tblVehicleEF	LHD2	0.44	0.53
tblVehicleEF	LHD2	1.1260e-003	1.1620e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	8.0770e-003	8.8510e-003
tblVehicleEF	LHD2	4.2100e-004	4.6900e-004
tblVehicleEF	LHD2	1.0770e-003	1.1110e-003
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tblVehicleEF	LHD2	7.7140e-003	8.4540e-003
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tblVehicleEF	LHD2	1.3970e-003	1.6960e-003
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	8.8800e-004	1.0400e-003
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	0.06	0.08

tblVehicleEF	LHD2	0.09	0.11
tblVehicleEF	LHD2	5.9000e-003	6.0210e-003
tblVehicleEF	LHD2	2.8100e-004	3.0300e-004
tblVehicleEF	LHD2	1.3970e-003	1.6960e-003
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	8.8800e-004	1.0400e-003
tblVehicleEF	LHD2	0.05	0.05
tblVehicleEF	LHD2	0.06	0.08
tblVehicleEF	LHD2	0.09	0.12
tblVehicleEF	LHD2	3.5180e-003	4.0020e-003
tblVehicleEF	LHD2	3.4000e-003	4.2820e-003
tblVehicleEF	LHD2	6.6050e-003	8.5780e-003
tblVehicleEF	LHD2	0.13	0.13
tblVehicleEF	LHD2	0.28	0.34
tblVehicleEF	LHD2	1.18	1.38
tblVehicleEF	LHD2	13.57	13.57
tblVehicleEF	LHD2	605.98	617.83
tblVehicleEF	LHD2	26.15	27.88
tblVehicleEF	LHD2	0.09	0.09
tblVehicleEF	LHD2	0.46	0.64
tblVehicleEF	LHD2	0.46	0.56
tblVehicleEF	LHD2	1.1260e-003	1.1620e-003
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	8.0770e-003	8.8510e-003
tblVehicleEF	LHD2	4.2100e-004	4.6900e-004
tblVehicleEF	LHD2	1.0770e-003	1.1110e-003

tblVehicleEF	LHD2	2.6710e-003	2.6540e-003
tblVehicleEF	LHD2	7.7140e-003	8.4540e-003
tblVehicleEF	LHD2	3.8700e-004	4.3100e-004
tblVehicleEF	LHD2	9.4200e-004	1.1610e-003
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	6.1900e-004	7.2300e-004
tblVehicleEF	LHD2	0.04	0.04
tblVehicleEF	LHD2	0.07	0.09
tblVehicleEF	LHD2	0.09	0.12
tblVehicleEF	LHD2	5.9000e-003	6.0210e-003
tblVehicleEF	LHD2	2.8200e-004	3.0400e-004
tblVehicleEF	LHD2	9.4200e-004	1.1610e-003
tblVehicleEF	LHD2	0.03	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	6.1900e-004	7.2300e-004
tblVehicleEF	LHD2	0.05	0.05
tblVehicleEF	LHD2	0.07	0.09
tblVehicleEF	LHD2	0.10	0.13
tblVehicleEF	MCY	0.55	0.54
tblVehicleEF	MCY	0.15	0.15
tblVehicleEF	MCY	18.62	18.94
tblVehicleEF	MCY	9.70	9.66
tblVehicleEF	MCY	190.93	188.92
tblVehicleEF	MCY	43.78	44.52
tblVehicleEF	MCY	1.13	1.13
tblVehicleEF	MCY	0.31	0.31

tblVehicleEF	MCY	2.5350e-003	2.4360e-003
tblVehicleEF	MCY	3.5080e-003	3.8630e-003
tblVehicleEF	MCY	2.3660e-003	2.2770e-003
tblVehicleEF	MCY	3.2930e-003	3.6360e-003
tblVehicleEF	MCY	1.05	1.06
tblVehicleEF	MCY	0.61	0.63
tblVehicleEF	MCY	0.64	0.65
tblVehicleEF	MCY	2.60	2.60
tblVehicleEF	MCY	0.56	0.60
tblVehicleEF	MCY	2.03	2.05
tblVehicleEF	MCY	2.2930e-003	2.2780e-003
tblVehicleEF	MCY	6.5600e-004	6.6300e-004
tblVehicleEF	MCY	1.05	1.06
tblVehicleEF	MCY	0.61	0.63
tblVehicleEF	MCY	0.64	0.65
tblVehicleEF	MCY	3.25	3.23
tblVehicleEF	MCY	0.56	0.60
tblVehicleEF	MCY	2.21	2.23
tblVehicleEF	MCY	0.54	0.53
tblVehicleEF	MCY	0.13	0.13
tblVehicleEF	MCY	17.96	18.24
tblVehicleEF	MCY	8.84	8.82
tblVehicleEF	MCY	190.93	188.92
tblVehicleEF	MCY	43.78	44.52
tblVehicleEF	MCY	0.99	0.99
tblVehicleEF	MCY	0.29	0.29
tblVehicleEF	MCY	2.5350e-003	2.4360e-003

tblVehicleEF	MCY	3.5080e-003	3.8630e-003
tblVehicleEF	MCY	2.3660e-003	2.2770e-003
tblVehicleEF	MCY	3.2930e-003	3.6360e-003
tblVehicleEF	MCY	1.71	1.73
tblVehicleEF	MCY	0.67	0.70
tblVehicleEF	MCY	1.05	1.07
tblVehicleEF	MCY	2.54	2.54
tblVehicleEF	MCY	0.53	0.56
tblVehicleEF	MCY	1.81	1.83
tblVehicleEF	MCY	2.2810e-003	2.2650e-003
tblVehicleEF	MCY	6.3500e-004	6.4300e-004
tblVehicleEF	MCY	1.71	1.73
tblVehicleEF	MCY	0.67	0.70
tblVehicleEF	MCY	1.05	1.07
tblVehicleEF	MCY	3.18	3.16
tblVehicleEF	MCY	0.53	0.56
tblVehicleEF	MCY	1.97	1.99
tblVehicleEF	MCY	0.55	0.54
tblVehicleEF	MCY	0.15	0.15
tblVehicleEF	MCY	18.72	19.04
tblVehicleEF	MCY	9.85	9.80
tblVehicleEF	MCY	190.93	188.92
tblVehicleEF	MCY	43.78	44.52
tblVehicleEF	MCY	1.11	1.11
tblVehicleEF	MCY	0.31	0.31
tblVehicleEF	MCY	2.5350e-003	2.4360e-003
tblVehicleEF	MCY	3.5080e-003	3.8630e-003

tblVehicleEF	MCY	2.3660e-003	2.2770e-003
tblVehicleEF	MCY	3.2930e-003	3.6360e-003
tblVehicleEF	MCY	1.15	1.16
tblVehicleEF	MCY	0.78	0.82
tblVehicleEF	MCY	0.61	0.62
tblVehicleEF	MCY	2.61	2.61
tblVehicleEF	MCY	0.65	0.69
tblVehicleEF	MCY	2.07	2.09
tblVehicleEF	MCY	2.2950e-003	2.2800e-003
tblVehicleEF	MCY	6.5900e-004	6.6700e-004
tblVehicleEF	MCY	1.15	1.16
tblVehicleEF	MCY	0.78	0.82
tblVehicleEF	MCY	0.61	0.62
tblVehicleEF	MCY	3.26	3.25
tblVehicleEF	MCY	0.65	0.69
tblVehicleEF	MCY	2.25	2.28
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	1.10	1.33
tblVehicleEF	MDV	1.99	2.48
tblVehicleEF	MDV	481.40	512.22
tblVehicleEF	MDV	96.60	103.14
tblVehicleEF	MDV	0.12	0.15
tblVehicleEF	MDV	0.17	0.22
tblVehicleEF	MDV	2.2730e-003	2.3560e-003
tblVehicleEF	MDV	2.4250e-003	2.5140e-003
tblVehicleEF	MDV	2.0940e-003	2.1720e-003

tblVehicleEF	MDV	2.2300e-003	2.3120e-003
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.14	0.15
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.08	0.09
tblVehicleEF	MDV	0.15	0.19
tblVehicleEF	MDV	4.8190e-003	5.1310e-003
tblVehicleEF	MDV	1.0000e-003	1.0750e-003
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.14	0.15
tblVehicleEF	MDV	0.07	0.07
tblVehicleEF	MDV	0.04	0.05
tblVehicleEF	MDV	0.08	0.09
tblVehicleEF	MDV	0.16	0.21
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	9.6010e-003	0.01
tblVehicleEF	MDV	1.21	1.45
tblVehicleEF	MDV	1.70	2.12
tblVehicleEF	MDV	502.45	534.67
tblVehicleEF	MDV	96.60	103.14
tblVehicleEF	MDV	0.10	0.13
tblVehicleEF	MDV	0.16	0.20
tblVehicleEF	MDV	2.2730e-003	2.3560e-003
tblVehicleEF	MDV	2.4250e-003	2.5140e-003
tblVehicleEF	MDV	2.0940e-003	2.1720e-003
tblVehicleEF	MDV	2.2300e-003	2.3120e-003

tblVehicleEF	MDV	0.10	0.10
tblVehicleEF	MDV	0.14	0.16
tblVehicleEF	MDV	0.09	0.10
tblVehicleEF	MDV	0.03	0.04
tblVehicleEF	MDV	0.08	0.08
tblVehicleEF	MDV	0.13	0.17
tblVehicleEF	MDV	5.0310e-003	5.3570e-003
tblVehicleEF	MDV	9.9500e-004	1.0680e-003
tblVehicleEF	MDV	0.10	0.10
tblVehicleEF	MDV	0.14	0.16
tblVehicleEF	MDV	0.09	0.10
tblVehicleEF	MDV	0.04	0.05
tblVehicleEF	MDV	0.08	0.08
tblVehicleEF	MDV	0.14	0.18
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	0.01	0.01
tblVehicleEF	MDV	1.06	1.29
tblVehicleEF	MDV	2.05	2.56
tblVehicleEF	MDV	473.66	503.99
tblVehicleEF	MDV	96.60	103.14
tblVehicleEF	MDV	0.11	0.14
tblVehicleEF	MDV	0.17	0.22
tblVehicleEF	MDV	2.2730e-003	2.3560e-003
tblVehicleEF	MDV	2.4250e-003	2.5140e-003
tblVehicleEF	MDV	2.0940e-003	2.1720e-003
tblVehicleEF	MDV	2.2300e-003	2.3120e-003
tblVehicleEF	MDV	0.06	0.06

tblVehicleEF	MDV	0.15	0.16
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.03	0.03
tblVehicleEF	MDV	0.10	0.10
tblVehicleEF	MDV	0.15	0.19
tblVehicleEF	MDV	4.7420e-003	5.0480e-003
tblVehicleEF	MDV	1.0010e-003	1.0760e-003
tblVehicleEF	MDV	0.06	0.06
tblVehicleEF	MDV	0.15	0.16
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.04	0.05
tblVehicleEF	MDV	0.10	0.10
tblVehicleEF	MDV	0.16	0.21
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.43	2.24
tblVehicleEF	MH	4.82	5.78
tblVehicleEF	MH	1,126.11	1,130.03
tblVehicleEF	MH	59.42	60.43
tblVehicleEF	MH	0.93	1.08
tblVehicleEF	MH	0.71	0.80
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	9.8700e-004	1.1280e-003
tblVehicleEF	MH	3.2070e-003	3.2020e-003
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	9.0800e-004	1.0370e-003

tblVehicleEF	MH	0.76	0.95
tblVehicleEF	MH	0.05	0.07
tblVehicleEF	MH	0.33	0.41
tblVehicleEF	MH	0.06	0.09
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.28	0.33
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.7800e-004	7.0500e-004
tblVehicleEF	MH	0.76	0.95
tblVehicleEF	MH	0.05	0.07
tblVehicleEF	MH	0.33	0.41
tblVehicleEF	MH	0.08	0.12
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.30	0.36
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.47	2.30
tblVehicleEF	MH	4.54	5.44
tblVehicleEF	MH	1,126.11	1,130.03
tblVehicleEF	MH	59.42	60.43
tblVehicleEF	MH	0.86	0.99
tblVehicleEF	MH	0.68	0.76
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	9.8700e-004	1.1280e-003
tblVehicleEF	MH	3.2070e-003	3.2020e-003
tblVehicleEF	MH	0.02	0.02

tblVehicleEF	MH	9.0800e-004	1.0370e-003
tblVehicleEF	MH	1.12	1.41
tblVehicleEF	MH	0.05	0.07
tblVehicleEF	MH	0.47	0.58
tblVehicleEF	MH	0.06	0.09
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.27	0.31
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.7300e-004	6.9900e-004
tblVehicleEF	MH	1.12	1.41
tblVehicleEF	MH	0.05	0.07
tblVehicleEF	MH	0.47	0.58
tblVehicleEF	MH	0.09	0.12
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.29	0.34
tblVehicleEF	MH	0.02	0.03
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	1.42	2.22
tblVehicleEF	MH	4.87	5.83
tblVehicleEF	MH	1,126.11	1,130.03
tblVehicleEF	MH	59.42	60.43
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tblVehicleEF	MH	0.71	0.80
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	9.8700e-004	1.1280e-003
tblVehicleEF	MH	3.2070e-003	3.2020e-003

tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	9.0800e-004	1.0370e-003
tblVehicleEF	MH	0.85	1.08
tblVehicleEF	MH	0.07	0.08
tblVehicleEF	MH	0.34	0.42
tblVehicleEF	MH	0.06	0.08
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.28	0.33
tblVehicleEF	MH	0.01	0.01
tblVehicleEF	MH	6.7900e-004	7.0600e-004
tblVehicleEF	MH	0.85	1.08
tblVehicleEF	MH	0.07	0.08
tblVehicleEF	MH	0.34	0.42
tblVehicleEF	MH	0.08	0.12
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	0.31	0.36
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	3.4980e-003	4.8560e-003
tblVehicleEF	MHD	0.04	0.05
tblVehicleEF	MHD	0.35	0.37
tblVehicleEF	MHD	0.29	0.37
tblVehicleEF	MHD	5.13	6.14
tblVehicleEF	MHD	132.56	132.92
tblVehicleEF	MHD	1,140.29	1,150.98
tblVehicleEF	MHD	61.49	63.58
tblVehicleEF	MHD	0.35	0.49
tblVehicleEF	MHD	0.76	1.14

tblVehicleEF	MHD	10.11	9.96
tblVehicleEF	MHD	9.0000e-005	2.4800e-004
tblVehicleEF	MHD	2.8650e-003	5.1090e-003
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tblVehicleEF	MHD	2.7360e-003	4.8830e-003
tblVehicleEF	MHD	7.2200e-004	7.7600e-004
tblVehicleEF	MHD	9.8100e-004	1.1350e-003
tblVehicleEF	MHD	0.04	0.05
tblVehicleEF	MHD	0.02	0.03
tblVehicleEF	MHD	6.6900e-004	7.4200e-004
tblVehicleEF	MHD	0.04	0.05
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	0.32	0.37
tblVehicleEF	MHD	1.2770e-003	1.2810e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	7.0500e-004	7.4300e-004
tblVehicleEF	MHD	9.8100e-004	1.1350e-003
tblVehicleEF	MHD	0.04	0.05
tblVehicleEF	MHD	0.03	0.04
tblVehicleEF	MHD	6.6900e-004	7.4200e-004
tblVehicleEF	MHD	0.04	0.05
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	0.35	0.41
tblVehicleEF	MHD	0.01	0.02
tblVehicleEF	MHD	3.5450e-003	4.9280e-003
tblVehicleEF	MHD	0.04	0.05

tblVehicleEF	MHD	0.26	0.27
tblVehicleEF	MHD	0.30	0.38
tblVehicleEF	MHD	4.87	5.83
tblVehicleEF	MHD	140.40	140.78
tblVehicleEF	MHD	1,140.29	1,150.98
tblVehicleEF	MHD	61.49	63.58
tblVehicleEF	MHD	0.36	0.51
tblVehicleEF	MHD	0.71	1.08
tblVehicleEF	MHD	10.08	9.92
tblVehicleEF	MHD	7.6000e-005	2.0900e-004
tblVehicleEF	MHD	2.8650e-003	5.1090e-003
tblVehicleEF	MHD	7.8500e-004	8.4300e-004
tblVehicleEF	MHD	7.2000e-005	2.0000e-004
tblVehicleEF	MHD	2.7360e-003	4.8830e-003
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tblVehicleEF	MHD	1.4660e-003	1.7000e-003
tblVehicleEF	MHD	0.04	0.05
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	9.3700e-004	1.0480e-003
tblVehicleEF	MHD	0.04	0.05
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	0.30	0.36
tblVehicleEF	MHD	1.3510e-003	1.3550e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	7.0000e-004	7.3800e-004
tblVehicleEF	MHD	1.4660e-003	1.7000e-003
tblVehicleEF	MHD	0.04	0.05

tblVehicleEF	MHD	0.03	0.03
tblVehicleEF	MHD	9.3700e-004	1.0480e-003
tblVehicleEF	MHD	0.04	0.06
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	0.33	0.39
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	3.4850e-003	4.8360e-003
tblVehicleEF	MHD	0.04	0.05
tblVehicleEF	MHD	0.49	0.52
tblVehicleEF	MHD	0.29	0.37
tblVehicleEF	MHD	5.18	6.20
tblVehicleEF	MHD	121.72	122.05
tblVehicleEF	MHD	1,140.29	1,150.98
tblVehicleEF	MHD	61.49	63.58
tblVehicleEF	MHD	0.33	0.47
tblVehicleEF	MHD	0.74	1.12
tblVehicleEF	MHD	10.12	9.97
tblVehicleEF	MHD	1.0900e-004	3.0200e-004
tblVehicleEF	MHD	2.8650e-003	5.1090e-003
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tblVehicleEF	MHD	9.9000e-004	1.1690e-003
tblVehicleEF	MHD	0.04	0.05
tblVehicleEF	MHD	0.03	0.03
tblVehicleEF	MHD	6.4900e-004	7.2400e-004

tblVehicleEF	MHD	0.04	0.05
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	0.32	0.38
tblVehicleEF	MHD	1.1750e-003	1.1790e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	7.0600e-004	7.4400e-004
tblVehicleEF	MHD	9.9000e-004	1.1690e-003
tblVehicleEF	MHD	0.04	0.05
tblVehicleEF	MHD	0.04	0.04
tblVehicleEF	MHD	6.4900e-004	7.2400e-004
tblVehicleEF	MHD	0.04	0.05
tblVehicleEF	MHD	0.02	0.02
tblVehicleEF	MHD	0.35	0.41
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	5.4840e-003	7.7220e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.25	0.28
tblVehicleEF	OBUS	0.41	0.53
tblVehicleEF	OBUS	4.93	5.41
tblVehicleEF	OBUS	102.93	112.13
tblVehicleEF	OBUS	1,248.17	1,260.49
tblVehicleEF	OBUS	67.50	67.92
tblVehicleEF	OBUS	0.22	0.51
tblVehicleEF	OBUS	0.71	1.55
tblVehicleEF	OBUS	2.50	2.60
tblVehicleEF	OBUS	2.0000e-005	1.1400e-004
tblVehicleEF	OBUS	2.7480e-003	7.4300e-003

tblVehicleEF	OBUS	8.4800e-004	8.0700e-004
tblVehicleEF	OBUS	1.9000e-005	1.0900e-004
tblVehicleEF	OBUS	2.6130e-003	7.0930e-003
tblVehicleEF	OBUS	7.8000e-004	7.4200e-004
tblVehicleEF	OBUS	1.3910e-003	1.4340e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	7.6200e-004	7.6800e-004
tblVehicleEF	OBUS	0.04	0.06
tblVehicleEF	OBUS	0.04	0.04
tblVehicleEF	OBUS	0.31	0.34
tblVehicleEF	OBUS	9.9400e-004	1.0820e-003
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.6100e-004	7.7400e-004
tblVehicleEF	OBUS	1.3910e-003	1.4340e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.05
tblVehicleEF	OBUS	7.6200e-004	7.6800e-004
tblVehicleEF	OBUS	0.05	0.08
tblVehicleEF	OBUS	0.04	0.04
tblVehicleEF	OBUS	0.34	0.37
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	5.5780e-003	7.8490e-003
tblVehicleEF	OBUS	0.02	0.03
tblVehicleEF	OBUS	0.24	0.27
tblVehicleEF	OBUS	0.42	0.54
tblVehicleEF	OBUS	4.66	5.11

tblVehicleEF	OBUS	108.07	117.81
tblVehicleEF	OBUS	1,248.17	1,260.49
tblVehicleEF	OBUS	67.50	67.92
tblVehicleEF	OBUS	0.23	0.53
tblVehicleEF	OBUS	0.67	1.46
tblVehicleEF	OBUS	2.46	2.57
tblVehicleEF	OBUS	1.7000e-005	9.6000e-005
tblVehicleEF	OBUS	2.7480e-003	7.4300e-003
tblVehicleEF	OBUS	8.4800e-004	8.0700e-004
tblVehicleEF	OBUS	1.6000e-005	9.2000e-005
tblVehicleEF	OBUS	2.6130e-003	7.0930e-003
tblVehicleEF	OBUS	7.8000e-004	7.4200e-004
tblVehicleEF	OBUS	2.0340e-003	2.1010e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	1.0660e-003	1.0830e-003
tblVehicleEF	OBUS	0.04	0.06
tblVehicleEF	OBUS	0.04	0.04
tblVehicleEF	OBUS	0.30	0.32
tblVehicleEF	OBUS	1.0430e-003	1.1360e-003
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.5700e-004	7.6900e-004
tblVehicleEF	OBUS	2.0340e-003	2.1010e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.05
tblVehicleEF	OBUS	1.0660e-003	1.0830e-003
tblVehicleEF	OBUS	0.05	0.08

tblVehicleEF	OBUS	0.04	0.04
tblVehicleEF	OBUS	0.32	0.35
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	5.4590e-003	7.6880e-003
tblVehicleEF	OBUS	0.03	0.03
tblVehicleEF	OBUS	0.26	0.30
tblVehicleEF	OBUS	0.41	0.53
tblVehicleEF	OBUS	4.98	5.47
tblVehicleEF	OBUS	95.85	104.30
tblVehicleEF	OBUS	1,248.17	1,260.49
tblVehicleEF	OBUS	67.50	67.92
tblVehicleEF	OBUS	0.21	0.49
tblVehicleEF	OBUS	0.70	1.52
tblVehicleEF	OBUS	2.50	2.61
tblVehicleEF	OBUS	2.4000e-005	1.3900e-004
tblVehicleEF	OBUS	2.7480e-003	7.4300e-003
tblVehicleEF	OBUS	8.4800e-004	8.0700e-004
tblVehicleEF	OBUS	2.3000e-005	1.3300e-004
tblVehicleEF	OBUS	2.6130e-003	7.0930e-003
tblVehicleEF	OBUS	7.8000e-004	7.4200e-004
tblVehicleEF	OBUS	1.4050e-003	1.4690e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.03	0.04
tblVehicleEF	OBUS	7.3700e-004	7.4700e-004
tblVehicleEF	OBUS	0.04	0.06
tblVehicleEF	OBUS	0.04	0.04
tblVehicleEF	OBUS	0.31	0.34

tblVehicleEF	OBUS	9.2600e-004	1.0070e-003
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	7.6200e-004	7.7500e-004
tblVehicleEF	OBUS	1.4050e-003	1.4690e-003
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	0.05	0.06
tblVehicleEF	OBUS	7.3700e-004	7.4700e-004
tblVehicleEF	OBUS	0.05	0.08
tblVehicleEF	OBUS	0.04	0.04
tblVehicleEF	OBUS	0.34	0.37
tblVehicleEF	SBUS	0.83	0.84
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.06	0.06
tblVehicleEF	SBUS	8.41	8.15
tblVehicleEF	SBUS	0.61	0.72
tblVehicleEF	SBUS	7.01	7.31
tblVehicleEF	SBUS	1,089.91	1,121.00
tblVehicleEF	SBUS	1,062.27	1,079.30
tblVehicleEF	SBUS	57.76	55.06
tblVehicleEF	SBUS	7.82	9.20
tblVehicleEF	SBUS	3.46	4.17
tblVehicleEF	SBUS	11.58	12.12
tblVehicleEF	SBUS	7.0050e-003	9.3410e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	8.9100e-004	8.1500e-004
tblVehicleEF	SBUS	6.7020e-003	8.9370e-003

tblVehicleEF	SBUS	2.6490e-003	2.6670e-003
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	8.1900e-004	7.5000e-004
tblVehicleEF	SBUS	3.4080e-003	3.3650e-003
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	SBUS	1.00	0.97
tblVehicleEF	SBUS	1.8930e-003	1.7650e-003
tblVehicleEF	SBUS	0.09	0.10
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.37	0.38
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	6.9900e-004	6.7700e-004
tblVehicleEF	SBUS	3.4080e-003	3.3650e-003
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	SBUS	1.45	1.40
tblVehicleEF	SBUS	1.8930e-003	1.7650e-003
tblVehicleEF	SBUS	0.11	0.13
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.41	0.42
tblVehicleEF	SBUS	0.83	0.84
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.05	0.06
tblVehicleEF	SBUS	8.31	8.04
tblVehicleEF	SBUS	0.62	0.73
tblVehicleEF	SBUS	5.69	5.94
tblVehicleEF	SBUS	1,137.73	1,171.46

tblVehicleEF	SBUS	1,062.27	1,079.30
tblVehicleEF	SBUS	57.76	55.06
tblVehicleEF	SBUS	8.07	9.50
tblVehicleEF	SBUS	3.26	3.93
tblVehicleEF	SBUS	11.55	12.09
tblVehicleEF	SBUS	5.9050e-003	7.8750e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	8.9100e-004	8.1500e-004
tblVehicleEF	SBUS	5.6500e-003	7.5340e-003
tblVehicleEF	SBUS	2.6490e-003	2.6670e-003
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	8.1900e-004	7.5000e-004
tblVehicleEF	SBUS	5.0090e-003	4.9570e-003
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	SBUS	1.00	0.97
tblVehicleEF	SBUS	2.6560e-003	2.5080e-003
tblVehicleEF	SBUS	0.09	0.10
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.33	0.34
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	6.7700e-004	6.5400e-004
tblVehicleEF	SBUS	5.0090e-003	4.9570e-003
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	SBUS	1.44	1.40
tblVehicleEF	SBUS	2.6560e-003	2.5080e-003

tblVehicleEF	SBUS	0.11	0.13
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.36	0.37
tblVehicleEF	SBUS	0.83	0.84
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.06	0.07
tblVehicleEF	SBUS	8.54	8.31
tblVehicleEF	SBUS	0.61	0.72
tblVehicleEF	SBUS	7.24	7.56
tblVehicleEF	SBUS	1,023.86	1,051.30
tblVehicleEF	SBUS	1,062.27	1,079.30
tblVehicleEF	SBUS	57.76	55.06
tblVehicleEF	SBUS	7.48	8.80
tblVehicleEF	SBUS	3.40	4.10
tblVehicleEF	SBUS	11.58	12.13
tblVehicleEF	SBUS	8.5240e-003	0.01
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	8.9100e-004	8.1500e-004
tblVehicleEF	SBUS	8.1550e-003	0.01
tblVehicleEF	SBUS	2.6490e-003	2.6670e-003
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	8.1900e-004	7.5000e-004
tblVehicleEF	SBUS	3.3910e-003	3.4320e-003
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	SBUS	1.00	0.98
tblVehicleEF	SBUS	1.8130e-003	1.6940e-003

tblVehicleEF	SBUS	0.09	0.10
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	0.38	0.39
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	7.0300e-004	6.8100e-004
tblVehicleEF	SBUS	3.3910e-003	3.4320e-003
tblVehicleEF	SBUS	0.03	0.03
tblVehicleEF	SBUS	1.45	1.41
tblVehicleEF	SBUS	1.8130e-003	1.6940e-003
tblVehicleEF	SBUS	0.11	0.13
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	0.42	0.43
tblVehicleEF	UBUS	2.28	2.61
tblVehicleEF	UBUS	0.05	0.05
tblVehicleEF	UBUS	10.20	11.22
tblVehicleEF	UBUS	8.89	8.87
tblVehicleEF	UBUS	1,934.49	1,968.89
tblVehicleEF	UBUS	104.15	96.56
tblVehicleEF	UBUS	8.69	9.98
tblVehicleEF	UBUS	14.82	15.36
tblVehicleEF	UBUS	0.59	0.61
tblVehicleEF	UBUS	0.12	0.13
tblVehicleEF	UBUS	1.1960e-003	1.0870e-003
tblVehicleEF	UBUS	0.25	0.26
tblVehicleEF	UBUS	0.11	0.13
tblVehicleEF	UBUS	1.1000e-003	9.9900e-004

tblVehicleEF	UBUS	4.1520e-003	4.1440e-003
tblVehicleEF	UBUS	0.07	0.07
tblVehicleEF	UBUS	2.4690e-003	2.3870e-003
tblVehicleEF	UBUS	0.74	0.85
tblVehicleEF	UBUS	0.02	0.02
tblVehicleEF	UBUS	0.69	0.68
tblVehicleEF	UBUS	9.7410e-003	9.8600e-003
tblVehicleEF	UBUS	1.2020e-003	1.1250e-003
tblVehicleEF	UBUS	4.1520e-003	4.1440e-003
tblVehicleEF	UBUS	0.07	0.07
tblVehicleEF	UBUS	2.4690e-003	2.3870e-003
tblVehicleEF	UBUS	3.11	3.56
tblVehicleEF	UBUS	0.02	0.02
tblVehicleEF	UBUS	0.76	0.74
tblVehicleEF	UBUS	2.29	2.61
tblVehicleEF	UBUS	0.05	0.05
tblVehicleEF	UBUS	10.25	11.27
tblVehicleEF	UBUS	7.71	7.69
tblVehicleEF	UBUS	1,934.49	1,968.89
tblVehicleEF	UBUS	104.15	96.56
tblVehicleEF	UBUS	8.19	9.41
tblVehicleEF	UBUS	14.77	15.31
tblVehicleEF	UBUS	0.59	0.61
tblVehicleEF	UBUS	0.12	0.13
tblVehicleEF	UBUS	1.1960e-003	1.0870e-003
tblVehicleEF	UBUS	0.25	0.26
tblVehicleEF	UBUS	0.11	0.13

tblVehicleEF	UBUS	1.1000e-003	9.9900e-004
tblVehicleEF	UBUS	5.9260e-003	5.9080e-003
tblVehicleEF	UBUS	0.07	0.07
tblVehicleEF	UBUS	3.3920e-003	3.2830e-003
tblVehicleEF	UBUS	0.75	0.86
tblVehicleEF	UBUS	0.02	0.02
tblVehicleEF	UBUS	0.64	0.62
tblVehicleEF	UBUS	9.7420e-003	9.8610e-003
tblVehicleEF	UBUS	1.1820e-003	1.1050e-003
tblVehicleEF	UBUS	5.9260e-003	5.9080e-003
tblVehicleEF	UBUS	0.07	0.07
tblVehicleEF	UBUS	3.3920e-003	3.2830e-003
tblVehicleEF	UBUS	3.12	3.57
tblVehicleEF	UBUS	0.02	0.02
tblVehicleEF	UBUS	0.70	0.68
tblVehicleEF	UBUS	2.28	2.61
tblVehicleEF	UBUS	0.05	0.05
tblVehicleEF	UBUS	10.19	11.21
tblVehicleEF	UBUS	9.10	9.08
tblVehicleEF	UBUS	1,934.49	1,968.89
tblVehicleEF	UBUS	104.15	96.56
tblVehicleEF	UBUS	8.53	9.79
tblVehicleEF	UBUS	14.83	15.38
tblVehicleEF	UBUS	0.59	0.61
tblVehicleEF	UBUS	0.12	0.13
tblVehicleEF	UBUS	1.1960e-003	1.0870e-003
tblVehicleEF	UBUS	0.25	0.26

tblVehicleEF	UBUS	0.11	0.13
tblVehicleEF	UBUS	1.1000e-003	9.9900e-004
tblVehicleEF	UBUS	4.6510e-003	4.7000e-003
tblVehicleEF	UBUS	0.08	0.08
tblVehicleEF	UBUS	2.5600e-003	2.5010e-003
tblVehicleEF	UBUS	0.74	0.85
tblVehicleEF	UBUS	0.03	0.03
tblVehicleEF	UBUS	0.71	0.69
tblVehicleEF	UBUS	9.7410e-003	9.8590e-003
tblVehicleEF	UBUS	1.2060e-003	1.1290e-003
tblVehicleEF	UBUS	4.6510e-003	4.7000e-003
tblVehicleEF	UBUS	0.08	0.08
tblVehicleEF	UBUS	2.5600e-003	2.5010e-003
tblVehicleEF	UBUS	3.10	3.55
tblVehicleEF	UBUS	0.03	0.03
tblVehicleEF	UBUS	0.77	0.75

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	2.0000e-004	1.5000e-004	1.7400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4771	0.4771	1.0000e-005	0.0000	0.4774
Maximum	**2.0000e-004**	**1.5000e-004**	**1.7400e-003**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4771**	**0.4771**	**1.0000e-005**	**0.0000**	**0.4774**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	2.0000e-004	1.5000e-004	1.7400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4771	0.4771	1.0000e-005	0.0000	0.4774
Maximum	**2.0000e-004**	**1.5000e-004**	**1.7400e-003**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4771**	**0.4771**	**1.0000e-005**	**0.0000**	**0.4774**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-22-2022	7-21-2022	0.0003	0.0003
		Highest	0.0003	0.0003

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0204	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2000e-004	1.2000e-004	0.0000	0.0000	1.3000e-004
Energy	2.5000e-004	2.2400e-003	1.8800e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	24.7263	24.7263	9.7000e-004	2.4000e-004	24.8205
Mobile	0.0127	0.0663	0.1715	6.2000e-004	0.0512	5.2000e-004	0.0518	0.0137	4.9000e-004	0.0142	0.0000	57.4280	57.4280	2.9700e-003	0.0000	57.5022
Waste						0.0000	0.0000		0.0000	0.0000	0.9439	0.0000	0.9439	0.0558	0.0000	2.3385
Water						0.0000	0.0000		0.0000	0.0000	0.2819	5.6149	5.8969	0.0292	7.3000e-004	6.8447
Total	**0.0333**	**0.0686**	**0.1734**	**6.3000e-004**	**0.0512**	**6.9000e-004**	**0.0519**	**0.0137**	**6.6000e-004**	**0.0144**	**1.2258**	**87.7693**	**88.9952**	**0.0889**	**9.7000e-004**	**91.5060**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0204	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2000e-004	1.2000e-004	0.0000	0.0000	1.3000e-004
Energy	2.5000e-004	2.2400e-003	1.8800e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	24.7263	24.7263	9.7000e-004	2.4000e-004	24.8205
Mobile	0.0127	0.0663	0.1715	6.2000e-004	0.0512	5.2000e-004	0.0518	0.0137	4.9000e-004	0.0142	0.0000	57.4280	57.4280	2.9700e-003	0.0000	57.5022
Waste						0.0000	0.0000		0.0000	0.0000	0.9439	0.0000	0.9439	0.0558	0.0000	2.3385
Water						0.0000	0.0000		0.0000	0.0000	0.2819	5.6149	5.8969	0.0292	7.3000e-004	6.8447
Total	**0.0333**	**0.0686**	**0.1734**	**6.3000e-004**	**0.0512**	**6.9000e-004**	**0.0519**	**0.0137**	**6.6000e-004**	**0.0144**	**1.2258**	**87.7693**	**88.9952**	**0.0889**	**9.7000e-004**	**91.5060**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/22/2022	5/5/2022	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	0.00	81	0.73
Demolition	Rubber Tired Dozers	0	0.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	0	0.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	0	10.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.5000e-004	1.7400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4771	0.4771	1.0000e-005	0.0000	0.4774
Total	**2.0000e-004**	**1.5000e-004**	**1.7400e-003**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4771**	**0.4771**	**1.0000e-005**	**0.0000**	**0.4774**

3.2 Demolition - 2022

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.5000e-004	1.7400e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.4771	0.4771	1.0000e-005	0.0000	0.4774
Total	**2.0000e-004**	**1.5000e-004**	**1.7400e-003**	**1.0000e-005**	**5.5000e-004**	**0.0000**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.4771**	**0.4771**	**1.0000e-005**	**0.0000**	**0.4774**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0127	0.0663	0.1715	6.2000e-004	0.0512	5.2000e-004	0.0518	0.0137	4.9000e-004	0.0142	0.0000	57.4280	57.4280	2.9700e-003	0.0000	57.5022
Unmitigated	0.0127	0.0663	0.1715	6.2000e-004	0.0512	5.2000e-004	0.0518	0.0137	4.9000e-004	0.0142	0.0000	57.4280	57.4280	2.9700e-003	0.0000	57.5022

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	55.15	12.30	5.25	134,979	134,979
Total	55.15	12.30	5.25	134,979	134,979

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	16.60	8.40	6.90	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.546501	0.044961	0.204016	0.120355	0.015740	0.006196	0.020131	0.030678	0.002515	0.002201	0.005142	0.000687	0.000876

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	22.2876	22.2876	9.2000e-004	1.9000e-004	22.3673
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	22.2876	22.2876	9.2000e-004	1.9000e-004	22.3673
NaturalGas Mitigated	2.5000e-004	2.2400e-003	1.8800e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	2.4387	2.4387	5.0000e-005	4.0000e-005	2.4532
NaturalGas Unmitigated	2.5000e-004	2.2400e-003	1.8800e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	2.4387	2.4387	5.0000e-005	4.0000e-005	2.4532

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	45700	2.5000e-004	2.2400e-003	1.8800e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	2.4387	2.4387	5.0000e-005	4.0000e-005	2.4532
Total		**2.5000e-004**	**2.2400e-003**	**1.8800e-003**	**1.0000e-005**		**1.7000e-004**	**1.7000e-004**		**1.7000e-004**	**1.7000e-004**	**0.0000**	**2.4387**	**2.4387**	**5.0000e-005**	**4.0000e-005**	**2.4532**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	45700	2.5000e-004	2.2400e-003	1.8800e-003	1.0000e-005		1.7000e-004	1.7000e-004		1.7000e-004	1.7000e-004	0.0000	2.4387	2.4387	5.0000e-005	4.0000e-005	2.4532
Total		**2.5000e-004**	**2.2400e-003**	**1.8800e-003**	**1.0000e-005**		**1.7000e-004**	**1.7000e-004**		**1.7000e-004**	**1.7000e-004**	**0.0000**	**2.4387**	**2.4387**	**5.0000e-005**	**4.0000e-005**	**2.4532**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	69950	22.2876	9.2000e-004	1.9000e-004	22.3673
Total		**22.2876**	**9.2000e-004**	**1.9000e-004**	**22.3673**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Office Building	69950	22.2876	9.2000e-004	1.9000e-004	22.3673
Total		**22.2876**	**9.2000e-004**	**1.9000e-004**	**22.3673**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0204	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2000e-004	1.2000e-004	0.0000	0.0000	1.3000e-004
Unmitigated	0.0204	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2000e-004	1.2000e-004	0.0000	0.0000	1.3000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.3200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0181					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2000e-004	1.2000e-004	0.0000	0.0000	1.3000e-004
Total	**0.0204**	**0.0000**	**6.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.2000e-004**	**1.2000e-004**	**0.0000**	**0.0000**	**1.3000e-004**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.3200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0181					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-005	0.0000	6.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	1.2000e-004	1.2000e-004	0.0000	0.0000	1.3000e-004
Total	**0.0204**	**0.0000**	**6.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**1.2000e-004**	**1.2000e-004**	**0.0000**	**0.0000**	**1.3000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	5.8969	0.0292	7.3000e-004	6.8447
Unmitigated	5.8969	0.0292	7.3000e-004	6.8447

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0.888669 / 0.544668	5.8969	0.0292	7.3000e-004	6.8447
Total		**5.8969**	**0.0292**	**7.3000e-004**	**6.8447**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Office Building	0.888669 / 0.544668	5.8969	0.0292	7.3000e-004	6.8447
Total		**5.8969**	**0.0292**	**7.3000e-004**	**6.8447**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.9439	0.0558	0.0000	2.3385
Unmitigated	0.9439	0.0558	0.0000	2.3385

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	4.65	0.9439	0.0558	0.0000	2.3385
Total		**0.9439**	**0.0558**	**0.0000**	**2.3385**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Office Building	4.65	0.9439	0.0558	0.0000	2.3385
Total		**0.9439**	**0.0558**	**0.0000**	**2.3385**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

J.4

Project Construction Vehicle Fuel Calculations

ITC Construction Equipment

Fuel Comsumption Model

27-Sep-21

Meridian Consultants

24-hour equipment intensity

Equipment Usage and Load Assumptions

Morning /Evening Shift	Intensity	Usage Minutes	Morning /NIght Shift	Intensity	Usage Minutes
12:00 AM to 1: AM	25%	15	12:00 AM to 1: AM	50%	30
1:00 AM to 2 AM	25%	15	1:00 AM to 2 AM	50%	30
2 AM to 3 AM	25%	15	2 AM to 3 AM	50%	30
3 AM to 4 AM	25%	15	3 AM to 4 AM	50%	30
4 AM to 5 AM	25%	15	4 AM to 5 AM	50%	30
5 AM to 6 AM	25%	15	5 AM to 6 AM	50%	30
6 AM to 7 AM	25%	15	6 AM to 7 AM	50%	30
7 AM to 8 AM	100%	60	7 AM to 8 AM	100%	60
8 AM to 9 AM	100%	60	8 AM to 9 AM	100%	60
9 AM to 10 AM	100%	60	9 AM to 10 AM	100%	60
10 AM to 11 AM	100%	60	10 AM to 11 AM	100%	60
11 AM to 12 PM	100%	60	11 AM to 12 PM	100%	60
12 PM to 1 PM	100%	60	12 PM to 1 PM	100%	60
1 PM to 2 PM	100%	60	1 PM to 2 PM	100%	60
2 PM to 3 PM	100%	60	2 PM to 3 PM	100%	60
3 PM to 4 PM	100%	60	3 PM to 4 PM	50%	30
4 PM to 5 PM	100%	60	4 PM to 5 PM	50%	30
5 PM to 6 PM	100%	60	5 PM to 6 PM	50%	30
6 PM to 7 PM	100%	60	6 PM to 7 PM	50%	30
7 PM to 8 PM	75%	45	7 PM to 8 PM	38%	22.8
8 PM to 9 PM	75%	45	8 PM to 9 PM	38%	22.8
9 PM to 10 PM	75%	45	9 PM to 10 PM	38%	22.8
10 PM to 11 PM	50%	30	10 PM to 11 PM	25%	15
11 Pm to 12 AM	25%	15	11 Pm to 12 AM	50%	30
Total Daily Minutes		**1005**	**Total Daily Minutes**		**923.4**
Totals Daily Hours		**16.75**	**Totals Daily Hours**		**15.39**

Hourly Load Estimates		**Load Factor**		
		25%	**50%**	**100%**
On Road On Site	1-hour load in minutes	40	15	5
		67%	25%	8%
Off Road Off Site	1-hour load in minutes	30	20	10
		50%	33%	17%

	Start	Finish	Calendar Days	Work Days			
					6	7	86%
Phase 1	1/1/2024	7/31/2024	212	182			
Phase 2	5/1/2024	10/31/2024	183	157			
Phase 3	9/1/2024	3/31/2025	211	181			
Phase 4	2/1/2025	10/31/2025	272	233			

Off-Road On-Site Equipment: Off-road construction equipment includes dozers, loaders, sweepers and other heavy-duty construction equipment that is not licensed for travel on public highways.

Morning/Evening Shift

Equipment	HP	Impact Device	Noise Level (dba)	Exposure Limit	Phase 1	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 2	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 3	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 4	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 5	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 6	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 7	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 8	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Total	Total Days Use	Total Hr Use	Total Fuel Use
Crane	270	No	85	8 hr.	0	182	3,049	8.00	0	1	157	2,630	8	21,038	3	181	3031.75	8	24,254	6	233	3,903	8	187,332	6	286	4,791	8.00	229,944	6	181	3,032	8	145,524	1	209	3500.75	8	28,006	0	599	10,033	8	0	23	2028	33,969	636,098
Backhoe	127	No	80	8 hr.	3	182	3,049	4.01	36,673	3	157	2,630	4.01	31,636	3	181	3031.75	4.01	12,157	3	233	3,903	4.01	46,950	3	286	4,791	4.01	57,630	1	181	3,032	4.01	12,157	1	209	3500.75	4.01	14,038	0	599	10,033	4.01	0	17	2028	33,969	211,242
Loader	164	No	80	8 hr.	3	182	3,049	2.40	21,949	4	157	2,630	2.4	25,246	5	181	3031.75	2.4	7,276	3	233	3,903	2.4	28,100	1	286	4,791	2.40	11,497	1	181	3,032	2.4	7,276	0	209	3500.75	2.4	8,402	0	599	10,033	2.4	0	17	2028	33,969	109,746
Auger Drill Rig	600	Yes	85	8 hr.	0	182	3,049	6.09	0	1	157	2,630	6.09	16,015	3	181	3031.75	6.09	18,463	3	233	3,903	6.09	71,303	0	286	4,791	6.09	0	0	181	3,032	6.09	0	0	209	3500.75	6.09	21,320	0	599	10,033	6.09	0	7	2028	33,969	127,101
Compressor (air)	150	No	80	8 hr.	2	182	3,049	4.23	25,790	2	157	2,630	4.23	22,248	4	181	3031.75	4.23	12,824	5	233	3,903	4.23	82,543	4	286	4,791	4.23	81,055	3	181	3,032	4.23	38,473	1	209	3500.75	4.23	14,808	0	599	10,033	4.23	0	21	2028	33,969	277,742
Excavator	396	Yes	85	8 hr.	2	182	3,049	4.77	29,083	2	157	2,630	4.77	25,088	2	181	3031.75	4.77	14,461	1	233	3,903	4.77	18,616	0	286	4,791	4.77	0	0	181	3,032	4.77	0	0	209	3500.75	4.77	16,699	0	599	10,033	4.77	0	7	2028	33,969	103,947
Bobcat	72.9	No	85	8 hr.	2	182	3,049	2.40	14,633	2	157	2,630	2.4	12,623	2	181	3031.75	2.4	7,276	2	233	3,903	2.4	18,733	2	286	4,791	2.40	22,994	2	181	3,032	2.4	14,552	2	209	3500.75	2.4	8,402	0	599	10,033	2.4	0	14	2028	33,969	99,214
Impact Hammer	N/A	Yes	90	8 hr.	3	182	3,049	6.09	55,696	3	157	2,630	6.09	48,046	3	181	3031.75	6.09	18,463	2	233	3,903	6.09	47,535	2	286	4,791	6.09	58,348	0	181	3,032	6.09	0	0	209	3500.75	6.09	21,320	0	599	10,033	6.09	0	13	2028	33,969	249,408
Jackhammer	N/A	Yes	89	8 hr.	5	182	3,049	0.00	0	2	157	2,630	0	0	2	181	3031.75	0	0	2	233	3,903	0	0	2	286	4,791	0.00	0	0	181	3,032	0	0	0	209	3500.75	0	0	0	599	10,033	0	0	13	2028	33,969	0
Pneumatic Tools	N/A	Yes	85	8 hr.	5	182	3,049	0.00	0	5	157	2,630	0	0	10	181	3031.75	0	0	15	233	3,903	0	0	15	286	4,791	0.00	0	10	181	3,032	0	0	8	209	3500.75	0	0	6	599	10,033	0	0	74	2028	33,969	0
Generator	15plus	No	82	8 hr.	0	182	3,049	0.85	0	0	157	2,630	0.85	0	2	181	3031.75	0.85	2,577	3	233	3,903	0.85	9,952	3	286	4,791	0.85	12,216	2	181	3,032	0.85	5,154	2	209	3500.75	0.85	2,976	0	599	10,033	0.85	0	12	2028	33,969	32,874
Warning Horn	N/A	No	85	6 hr.	0	182	3,049	0.00	0	0	157	2,630	0	0	0	181	3031.75	0	0	0	233	3,903	0	0	0	286	4,791	0.00	0	0	181	3,032	0	0	0	209	3500.75	0	0	0	599	10,033	0	0	0	2028	33,969	0
Drum Mixer	1.5-5.5	No	80	8 hr.	0	182	3,049	3.00	0	0	157	2,630	3	0	2	181	3031.75	3	9,095	2	233	3,903	3	23,417	1	286	4,791	3.00	14,372	1	181	3,032	3	9,095	0	209	3500.75	3	10,502	0	599	10,033	3	0	6	2028	33,969	66,481
Drill Rig Truck	600	Yes	84	8 hr.	0	182	3,049	6.09	0	0	157	2,630	6.09	0	0	181	3031.75	6.09	18,463	0	233	3,903	6.09	0	0	286	4,791	6.09	0	1	181	3,032	6.09	18,463	2	209	3500.75	6.09	21,320	0	599	10,033	6.09	0	3	2028	33,969	58,246
Concrete Saw	24	No	90	8 hr.	2	182	3,049	0.00	0	1	157	2,630	0	0	1	181	3031.75	0	0	1	233	3,903	0	0	1	286	4,791	0.00	0	1	181	3,032	0	0	0	209	3500.75	0	0	0	599	10,033	0	0	7	2028	33,969	0
Compactor (ground)	80	Yes	83	8 hr.	0	182	3,049	2.16	0	1	157	2,630	2.16	5,680	2	181	3031.75	2.16	6,549	1	233	3,903	2.16	8,430	1	286	4,791	2.16	10,347	1	181	3,032	2.16	6,549	4	209	3500.75	2.16	7,562	0	599	10,033	2.16	0	10	2028	33,969	45,116
Portable Light Towers for night work	12.2	No	55	8 hr.	4	182	3,049	0.00	0	5	157	2,630	0	0	5	181	3031.75	0	0	5	233	3,903	0	0	2	286	4,791	0.00	0	2	181	3,032	0	0	0	209	3500.75	0	0	0	599	10,033	0	0	23	2028	33,969	0
MKN Lifts	49.9	No	75	9 hr.	3	182	3,049	0.67	6,127	8	157	2,630	0.67	14,095	8	181	3031.75	0.67	12,188	6	233	3,903	0.67	2,615	6	286	4,791	0.67	19,258	2	181	3,032	0.67	4,063	0	209	3500.75	0.67	0	0	599	10,033	0.67	6,722	33	2028	33,969	65,068
		Totals							**189,952**					**221,714**					**164,048**					**545,526**					**517,661**					**261,307**					**176,353**					**6,722**				**2,082,283**

Morning/Night Shift

Equipment	HP	Impact Device	Noise Level (dba)	Exposure Limit	Phase 1	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 2	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 3	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 4	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 5	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 6	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 7	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 8	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Total	Total Days Use	Total Hr Use	Total Fuel Use
Crane	270	No	85	8 hr.	0	182	2,801	8.00	0	1	157	2,416	8	19,330	3	181	2,786	8	66,854	6	233	3,586	8	172,122	6	286	4,402	8.00	211,274	6	181	2,786	8	133,708	1	209	3,217	8	25,732	0	599	9,219	8	0	23	2028	31,211	629,020
Backhoe	127	No	80	8 hr.	3	182	2,801	4.01	33,696	3	157	2,416	4.01	29,067	3	181	2,786	4.01	33,511	3	233	3,586	4.01	43,138	3	286	4,402	4.01	52,951	1	181	2,786	4.01	11,170	1	209	3,217	4.01	12,898	0	599	9,219	4.01	0	17	2028	31,211	216,431
Loader	164	No	80	8 hr.	3	182	2,801	2.40	20,167	4	157	2,416	2.4	23,196	5	181	2,786	2.4	33,427	3	233	3,586	2.4	25,818	1	286	4,402	2.40	10,564	1	181	2,786	2.4	6,685	0	209	3,217	2.4	0	0	599	9,219	2.4	0	17	2028	31,211	119,857
Auger Drill Rig	600	Yes	85	8 hr.	0	182	2,801	6.09	0	1	157	2,416	6.09	14,715	3	181	2,786	6.09	50,893	3	233	3,586	6.09	65,514	0	286	4,402	6.09	0	0	181	2,786	6.09	0	0	209	3,217	6.09	0	0	599	9,219	6.09	0	7	2028	31,211	131,121
Compressor (air)	150	No	80	8 hr.	2	182	2,801	4.23	23,696	2	157	2,416	4.23	20,441	4	181	2,786	4.23	47,132	5	233	3,586	4.23	75,841	4	286	4,402	4.23	74,474	3	181	2,786	4.23	35,349	1	209	3,217	4.23	13,606	0	599	9,219	4.23	0	21	2028	31,211	290,540
Excavator	396	Yes	85	8 hr.	2	182	2,801	4.77	26,721	2	157	2,416	4.77	23,051	2	181	2,786	4.77	26,575	1	233	3,586	4.77	17,105	0	286	4,402	4.77	0	0	181	2,786	4.77	0	0	209	3,217	4.77	0	0	599	9,219	4.77	0	7	2028	31,211	93,451
Bobcat	72.9	No	85	8 hr.	2	182	2,801	2.40	13,445	2	157	2,416	2.4	11,598	2	181	2,786	2.4	13,371	2	233	3,586	2.4	17,212	2	286	4,402	2.40	21,127	2	181	2,786	2.4	13,371	2	209	3,217	2.4	15,439	0	599	9,219	2.4	0	14	2028	31,211	105,563
Impact Hammer	N/A	Yes	90	8 hr.	3	182	2,801	6.09	51,174	3	157	2,416	6.09	44,145	3	181	2,786	6.09	50,893	2	233	3,586	6.09	43,676	2	286	4,402	6.09	53,611	0	181	2,786	6.09	0	0	209	3,217	6.09	0	0	599	9,219	6.09	0	13	2028	31,211	243,498
Jackhammer	N/A	Yes	89	8 hr.	5	182	2,801	0.00	0	2	157	2,416	0	0	2	181	2,786	0	0	2	233	3,586	0	0	2	286	4,402	0.00	0	0	181	2,786	0	0	0	209	3,217	0	0	0	599	9,219	0	0	13	2028	31,211	0
Pneumatic Tools	N/A	Yes	85	8 hr.	5	182	2,801	0.00	0	5	157	2,416	0	0	10	181	2,786	0	0	15	233	3,586	0	0	15	286	4,402	0.00	0	10	181	2,786	0	0	8	209	3,217	0	0	6	599	9,219	0	0	74	2028	31,211	0
Generator	15plus	No	82	8 hr.	0	182	2,801	0.85	0	0	157	2,416	0.85	0	2	181	2,786	0.85	4,736	3	233	3,586	0.85	9,144	3	286	4,402	0.85	11,224	2	181	2,786	0.85	4,736	2	209	3,217	0.85	5,468		599	9,219	0.85	0	12	2028	31,211	35,307
Warning Horn	N/A	No	85	6 hr.	0	182	2,801	0.00	0	0	157	2,416	0	0	0	181	2,786	0	0	0	233	3,586	0	0	0	286	4,402	0.00	0	0	181	2,786	0	0	0	209	3,217	0	0	0	599	9,219	0	0	0	2028	31,211	0
Drum Mixer	1.5-5.5	No	80	8 hr.	0	182	2,801	3.00	0	0	157	2,416	3	0	2	181	2,786	3	16,714	2	233	3,586	3	21,515	1	286	4,402	3.00	13,205	1	181	2,786	3	8,357	0	209	3,217	3	0	0	599	9,219	3	0	6	2028	31,211	59,790
Drill Rig Truck	600	Yes	84	8 hr.	0	182	2,801	6.09	0	0	157	2,416	6.09	0	0	181	2,786	6.09	0	0	233	3,586	6.09	0	0	286	4,402	6.09	0	1	181	2,786	6.09	16,964	2	209	3,217	6.09	39,177	0	599	9,219	6.09	0	3	2028	31,211	56,141
Concrete Saw	24	No	90	8 hr.	2	182	2,801	0.00	0	1	157	2,416	0	0	1	181	2,786	0	0	1	233	3,586	0	0	1	286	4,402	0.00	0	1	181	2,786	0	0	0	209	3,217	0	0	0	599	9,219	0	0	7	2028	31,211	0
Compactor (ground)	80	Yes	83	8 hr.	0	182	2,801	2.16	0	1	157	2,416	2.16	5,219	2	181	2,786	2.16	12,034	1	233	3,586	2.16	7,745	1	286	4,402	2.16	9,507	1	181	2,786	2.16	6,017	4	209	3,217	2.16	27,791	0	599	9,219	2.16	0	10	2028	31,211	68,313
Portable Light Towers for night work	12.2	No	55	8 hr.	4	182	2,801	0.00	0	5	157	2,416	0	0	5	181	2,786	0	0	5	233	3,586	0	0	2	286	4,402	0.00	0	2	181	2,786	0	0	0	209	3,217	0	0	0	599	9,219	0	0	23	2028	31,211	0
MKN Lifts	49.9	No	75	9 hr.	3	182	2,801	0.67	5,630	8	157	2,416	0.67	12,951	8	181	2,786	0.67	14,931	6	233	3,586	0.67	2,403	6	286	4,402	0.67	17,694	2	181	2,786	0.67	0	0	209	3,217	0.67	0	0	599	9218.61	0.67	6,176	33	2028	31,211	59,785
Totals									**174,529**					**203,712**					**371,068**					**501,233**					**475,630**					**236,357**					**140,111**					**6,176**				**2,108,818**

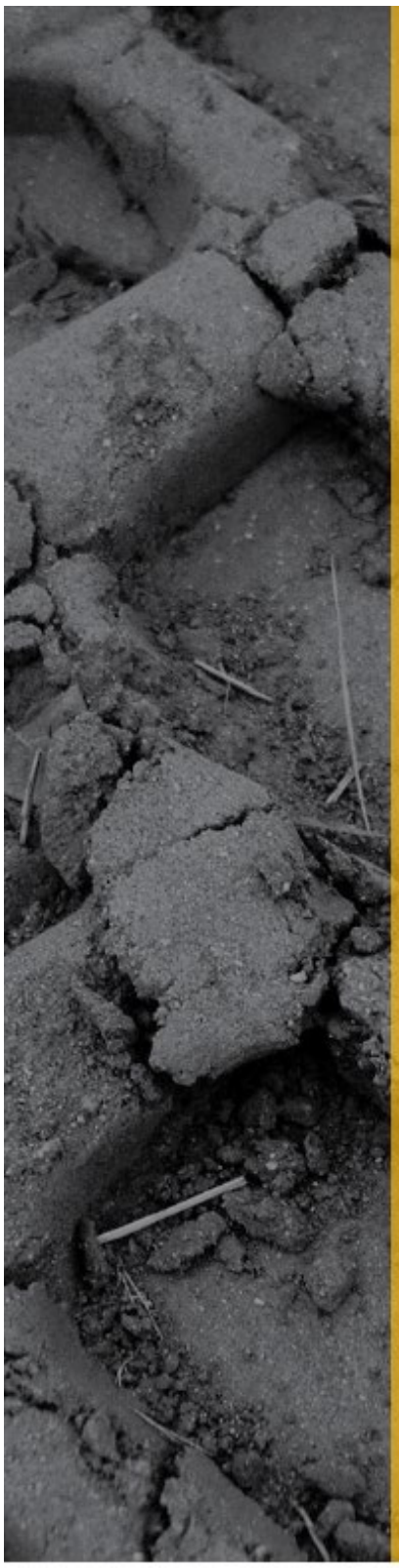
On-Road On-Site Equipment: On-road on-site equipment includes shuttle vans transporting construction employees to and from the site(s), on-site pick-up trucks, crew vans, water trucks, dump trucks, haul trucks and other on road-road vehicles licensed to travel on public roadways.

Morning/Evening Shift

Equipment	HP	Impact Device	Noise Level	Exposure Limit	Phase 1	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 2	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 3	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 4	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 5	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 6	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 7	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 8	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Total	Total Days Use	Total Hr Use	Total Fuel Use
Demo Dump Trucks	335-475	No	76	8 hr.	1400	182	3,049	4.7	20,059,130	300	157	2,630	4.7	12,360	0	181	3,032	4.7	14,249	0	233	3,903	4.7	18,343	0	286	4,791	4.7	0	0	181	3,032	4.7	14,249	0	209	3,501	4.7	16,454	0	599	10,033	4.7	47,156	1343	2028	33,969	20,181,941
Asphalt Removal Trucks	335-475	No	76	8 hr.	25	182	3,049	4.7	358,199	20	157	2,630	4.7	12,360	25	181	3,032	4.7	14,249	0	233	3,903	4.7	18,343	0	286	4,791	4.7	0	0	181	3,032	4.7	14,249	0	209	3,501	4.7	16,454	0	599	10,033	4.7	47,156	172	2028	33,969	481,010
Asphalt Placement Trucks	335-475	No	76	8 hr.	0	182	3,049	4.7	0	40	157	2,630	4.7	12,360	20	181	3,032	4.7	14,249	0	233	3,903	4.7	18,343	20	286	4,791	4.7	450,307	50	181	3,032	4.7	14,249	85	209	3,501	4.7	16,454	0	599	10,033	4.7	47,156	209	2028	33,969	573,118
Soil Spoils Dump Trucks	335-475	No	76	8 hr.	305	182	3,049	4.7	4,370,025	1913	157	2,630	4.7	12,360	2015	181	3,032	4.7	14,249	1157	233	3,903	4.7	18,343	153	286	4,791	4.7	3,444,849	0	181	3,032	4.7	14,249	0	209	3,501	4.7	16,454	0	599	10,033	4.7	47,156	5515	2028	33,969	7,937,684
Utility Trucks	375-600	No	75	4 hr.	7	182	3,049		0	12	157	2,630	0	0	25	181	3,032	0	0	25	233	3,903	0	0	25	286	4,791		0	18	181	3,032	0	0	12	209	3,501	0	0	5	599	10,033	0	0	123	2028	33,969	0
Welder/Torch	23	No	73	8 hr.	2	182	3,049	0	0	4	157	2,630	0	0	4	181	3,032	0	0	2	233	3,903	0	0	2	286	4,791	0	0	2	181	3,032	0	0	2	209	3,501	0	0	2	599	10,033	0	0	20	2028	33,969	0
Water Truck	650	No	74	8 hr.	4	182	3,049	3.2	39,021	4	157	2,630	3.2	8,415	4	181	3,032	3.2	9,702	3	233	3,903	3.2	12,489	3	286	4,791	3.2	45,989	2	181	3,032	3.2	9,702	2	209	3,501	3.2	11,202	0	599	10,033	3.2	32,106	6	2028	33,969	168,626
Street Sweeper	240	No	74	8 hr.	1	182	3,049	3.2	9,755	1	157	2,630	3.2	8,415	1	181	3,032	3.2	9,702	1	233	3,903	3.2	12,489	1	286	4,791	3.2	15,330	1	181	3,032	3.2	9,702	1	209	3,501	3.2	11,202	1	599	10,033	3.2	32,106	6	2028	33,969	108,701
Flat Bed Trucks	650	No	74	5 hr.	20	182	3,049	3.2	195,104	20	157	2,630	3.2	8,415	30	181	3,032	3.2	9,702	30	233	3,903	3.2	12,489	30	286	4,791	3.2	459,888	30	181	3,032	3.2	9,702	20	209	3,501	3.2	11,202	10	599	10,033	3.2	32,106	184	2028	33,969	738,608
Pneumatic Tools	N/A	Yes	85	8 hr.	5	182	3,049	0	0	7	157	2,630	0	0	10	181	3,032	0	0	10	233	3,903	0	0	10	286	4,791	0	0	10	181	3,032	0	0	7	209	3,501	0	0	5	599	10,033	0	0	58	2028	33,969	0
Concrete Trucks	430	No	85	8 hr.	0	182	3,049	5	0	653	157	2,630	4.7	12,360	6112	181	3,032	4.7	14,249	6453	233	3,903	4.7	18,343	5823	286	4,791	5	131,106,883	3584	181	3,032	4.7	14,249	1153	209	3,501	4.7	16,454	0	599	10,033	4.7	47,156	21,866	2028	33,969	131,229,694
Conc. Pump Trucks	600	No	84	8 hr.	0	182	3,049	4.7	0	2	157	2,630	4.7	12,360	3	181	3,032	4.7	14,249	3	233	3,903	4.7	18,343	2	286	4,791	4.7	45,031	2	181	3,032	4.7	14,249	0	209	3,501	4.7	16,454	0	599	10,033	4.7	47,156	8	2028	33,969	167,842
Total									**25,031,234**					**87,045**					**100,351**					**129,181**					**135,523,245**					**100,351**					**115,875**					**332,101**				**161,419,382**

Morning/Night Shift

Equipment	HP	Impact Device	Noise Level	Exposure Limit	Phase 1	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 2	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 3	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 4	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 5	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 6	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 7	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Phase 8	Total Days Use	Total Hr Use	Gallons/Hr	Total Fuel Use	Total	Total Days Use	Total Hr Use	Total Fuel Use
Demo Dump Trucks	335-475	No	76	8 hr.	1400	182	2,801	4.7	18,430,448	300	157	2,416	4.7	11,356	0	181	2,786	4.7	2,786	0	233	3,586	4.7	16,854	0	286	4,402	4.7	0	0	181	2,786	4.7	13,092	0	209	3,217	4.7	3,217	0	599	9,219	4.7	43,327	1343	2028	31,211	18,521,080
Asphalt Removal Trucks	335-475	No	76	8 hr.	25	182	2,801	4.7	329,115	20	157	2,416	4.7	11,356	25	181	2,786	4.7	2,786	0	233	3,586	4.7	16,854	0	286	4,402	4.7	0	0	181	2,786	4.7	13,092	0	209	3,217	4.7	3,217	0	599	9,219	4.7	43,327	172	2028	31,211	419,747
Asphalt Placement Trucks	335-475	No	76	8 hr.	0	182	2,801	4.7	0	40	157	2,416	4.7	11,356	20	181	2,786	4.7	2,786	0	233	3,586	4.7	16,854	20	286	4,402	4.7	413,745	50	181	2,786	4.7	13,092	85	209	3,217	4.7	3,217	0	599	9,219	4.7	43,327	209	2028	31,211	504,376
Soil Spoils Dump Trucks	335-475	No	76	8 hr.	305	182	2,801	4.7	4,015,205	1913	157	2,416	4.7	11,356	2015	181	2,786	4.7	2,786	1157	233	3,586	4.7	16,854	153	286	4,402	4.7	3,165,147	0	181	2,786	4.7	13,092	0	209	3,217	4.7	3,217	0	599	9,219	4.7	43,327	5515	2028	31,211	7,270,984
Utility Trucks	375-600	No	75	4 hr.	7	182	2,801		0	12	157	2,416	0	0	25	181	2,786	0	2,786	25	233	3,586	0	0	25	286	4,402		0	18	181	2,786	0	0	12	209	3,217	0	3,217	5	599	9,219	0	0	123	2028	31,211	6,002
Welder/Torch	23	No	73	8 hr.	2	182	2,801	0	0	4	157	2,416	0	0	4	181	2,786	0	2,786	2	233	3,586	0	0	2	286	4,402	0	0	2	181	2,786	0	0	2	209	3,217	0	3,217	2	599	9,219	0	0	20	2028	31,211	6,002
Water Truck	650	No	74	8 hr.	4	182	2,801	3.2	35,853	4	157	2,416	3.2	7,732	4	181	2,786	3.2	2,786	3	233	3,586	3.2	11,475	3	286	4,402	3.2	42,255	2	181	2,786	3.2	8,914	2	209	3,217	3.2	3,217	0	599	9,219	3.2	29,500	6	2028	31,211	141,730
Street Sweeper	240	No	74	8 hr.	1	182	2,801	3.2	8,963	1	157	2,416	3.2	7,732	1	181	2,786	3.2	2,786	1	233	3,586	3.2	11,475	1	286	4,402	3.2	14,085	1	181	2,786	3.2	8,914	1	209	3,217	3.2	3,217	1	599	9,219	3.2	29,500	6	2028	31,211	86,670
Flat Bed Trucks	650	No	74	5 hr.	20	182	2,801	3.2	179,263	20	157	2,416	3.2	7,732	30	181	2,786	3.2	2,786	30	233	3,586	3.2	11,475	30	286	4,402	3.2	422,548	30	181	2,786	3.2	8,914	20	209	3,217	3.2	3,217	10	599	9,219	3.2	29,500	184	2028	31,211	665,433
Pneumatic Tools	N/A	Yes	85	8 hr.	5	182	2,801	0	0	7	157	2,416	0	0	10	181	2,786	0	2,786	10	233	3,586	0	0	10	286	4,402	0	0	10	181	2,786	0	0	7	209	3,217	0	3,217	5	599	9,219	0	0	58	2028	31,211	6,002
Concrete Trucks	430	No	85	8 hr.	0	182	2,801	5	0	653	157	2,416	4.7	11,356	6112	181	2,786	4.7	2,786	6453	233	3,586	4.7	16,854	5823	286	4,402	5	120,461,787	3584	181	2,786	4.7	13,092	1153	209	3,217	4.7	3,217	0	599	9,219	4.7	43,327	21,866	2028	31,211	120,552,419
Conc. Pump Trucks	600	No	84	8 hr.	0	182	2,801	4.7	0	2	157	2,416	4.7	11,356	3	181	2,786	4.7	2,786	3	233	3,586	4.7	16,854	2	286	4,402	4.7	41,374	2	181	2,786	4.7	13,092	0	209	3,217	4.7	3,217	0	599	9,219	4.7	43,327	8	2028	31,211	132,006
Totals									**22,998,847**					**91,333**					**33,427**					**135,546**					**124,560,941**					**105,295**					**38,598**					**348,463**				**148,312,451**



ESTIMATING OWNING & OPERATING COSTS

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or Corporate Global Mining (CGM): https://mining.cat.com
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or North American Commercial Division (NACD): https://dealer.cat.com
elect "Product Support," "Equipment Management Solutions,"
Owning and Operating Cost Information."

ONTENTS

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Machine users must balance productivity and costs to ieve optimum performance ... that is, achieve the ired production at the lowest possible cost. The roach most often used to measure machine perfor- nce is this simple equation:

$$\frac{\textit{Lowest Possible Hourly Costs}}{\textit{Highest Possible Hourly Productivity}} = \textit{Top Machine Performance}$$

Most sections of this Handbook deal with the productivity of Cat machines. This section considers the cost aspect of performance.

Hourly Owning and Operating Costs for a given machine can vary widely because they are influenced by many factors: the type of work the machine does, the ownership period, local prices of fuel and labor, the repair and maintenance costs, shipping costs from the factory, interest rates, etc. No attempt is made in this handbook to provide precise hourly costs for each model. Users must be able to estimate with a reasonable degree of accuracy what a machine will cost per hour to own and operate in a given application and locality. Therefore, this section provides a suggested method of estimating hourly owning and operating costs. When this method is coupled with local conditions and dealer input, it will result in reasonable estimates.

The method suggested follows several basic principles:

- Repair and Planned Maintenance cost per hour are developed jointly by the customer and local Cat dealer.
- In the examples, labor is assumed @ $60.00 per hour, fuel @ $1.25 per gallon. For reliable estimates, these costs must always be obtained locally.
- Because of different standards of comparison, what may seem a high application to one machine owner may appear only medium to another.
- Unless otherwise specified, the word "hour" when used in this section means clock or operating hours, not Service Meter Units.

JEL CONSUMPTION TABLES AND LOAD FACTOR GUIDES

RACK-TYPE TRACTORS

Model	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
D3K Tier 3 LRC	—	—	9.5	**2.5**	—	—
D4K Tier 3 LRC	—	—	10.2	**2.7**	—	—
D5K Tier 3 LRC	—	—	10.6	**2.8**	—	—
D3K2 Tier 4 Interim HRC	—	—	7.9	**2.1**	—	—
D4K2 Tier 4 Interim HRC	—	—	8.6	**2.3**	—	—
D5K2 Tier 4 Interim HRC	—	—	9.0	**2.4**	—	—
D5N	6.5-11.5	**1.5-3.5**	11.5-16.0	**3.5-4.5**	13.75-18.5	**3.75-5.0**
D5R	12.1-15.1	**3.2-4.0**	15.1-20.0	**4.0-5.3**	20.0-26.4	**5.3-6.9**
D6K Tier 3 HRC & LRC	—	—	12.4	**3.3**	—	—
D6K2 Tier 4 Interim HRC	—	—	11.3	**3.0**	—	—
D6N Tier 3 LRC	12.1-15.1	**3.2-4.0**	15.1-20.0	**4.0-5.3**	20.0-26.4	**5.3-6.9**
D6N Tier 4 Interim HRC	9.9-13.3	**2.6-3.5**	13.3-17.5	**3.5-4.6**	17.5-24.9	**4.6-6.6**
D6R (130 kW/**175 hp**)	13.2-18.9	**3.5-5.0**	18.9-24.6	**5.0-6.5**	24.6-30.3	**6.5-8.0**
D6R (145 kW/**195 hp**)	14.8-21.2	**3.9-5.6**	21.2-27.3	**5.6-7.2**	27.3-33.7	**7.2-8.9**
D6T (138 kW/**185 hp**)	15.5-22.3	**4.1-5.9**	22.3-28.8	**5.9-7.6**	28.8-35.6	**7.6-9.4**
D6T (149 kW/**200 hp**) (Tier 4 Interim)	15.1-21.6	**4.0-5.7**	21.6-28.0	**5.7-7.4**	28.0-34.4	**7.4-9.1**
D7E	14.8-20.8	**3.9-5.5**	20.8-27.2	**5.5-7.2**	27.2-34.5	**7.2-9.1**
D7R	17.8-24.4	**4.7-6.5**	24.4-31.0	**6.5-8.2**	31.0-37.6	**8.2-9.9**
D8R	22.5-32.0	**6.0-8.5**	32.0-41.5	**8.5-11.0**	41.5-51.0	**11.0-13.5**
D8T Tier 3	23.5-33.7	**6.2-8.9**	33.7-43.5	**8.9-11.5**	43.9-53.7	**11.6-14.2**
D8T Tier 4 Interim	23.9-34.3	**6.3-9.1**	34.3-44.2	**9.1-11.7**	44.6-54.6	**11.8-14.4**
D9T Tier 3	30.3-43.1	**8.0-11.4**	43.1-56.4	**11.4-14.9**	56.4-69.3	**14.9-18.3**
D9T Tier 2	28.2-40.1	**7.4-10.6**	40.1-52.5	**10.6-13.9**	52.5-64.4	**13.9-17.0**
D9T Tier 4*	31.2-44.4	**8.2-11.7**	44.4-58.1	**11.7-15.3**	58.1-71.4	**15.3-18.9**
D10T2 PLRC	39.5-56.3	**10.4-14.9**	56.3-73.3	**14.9-19.4**	73.3-90.2	**19.4-23.9**
D10T2 Tier 4	43.0-61.3	**11.4-16.3**	61.3-79.8	**16.3-21.1**	79.8-98.2	**21.1-26.0**
D11T PLRC	59.6-85.2	**15.8-22.5**	85.2-110.7	**22.5-29.3**	110.7-136.3	**29.3-36.0**
D11T Tier 4 Final	60.3-86.1	**15.9-22.8**	86.1-112.0	**22.8-29.6**	112.0-137.8	**29.6-36.4**

25

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ıcludes DEF.

Typical Application Description
(relative to work application)

Low — Pulling scrapers, most agricultural drawbar, stockpile, coal pile and finish grade applications. No impact. Intermittent full throttle operation.

Medium — Production dozing in clays, sands, gravels. Push loading scrapers, borrow pit ripping, most land clearing applications. Medium impact conditions. Production landfill work.

High — Heavy rock ripping. Push loading and dozing in hard rock. Working on rock surfaces. Continuous high impact conditions.

Load Factor Guide
(average engine load factor based on application description for each range)

Low 35%-50%
Medium 50%-65%
High 65%-80%

Product Link™ Information — Product link measured over hundreds of Track-Type Tractors shows that more than 90% of the machines experience an average fuel consumption equal to or lower than those shown in the Medium Application profile.

ELAYERS

del	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
1	5.7-11.7	**1.5-3.0**	9.7-15.1	**2.5-4.0**	13.2-18.9	**3.5-5.0**
3	11.8-16.9	**3.1-4.5**	16.9-21.8	**4.5-5.8**	21.8-26.8	**5.8-7.1**
7	15.3-21.9	**4.0-5.8**	21.9-28.3	**5.8-7.5**	28.3-34.9	**7.5-9.2**

R Series 2	8.5-12.3	**2.2-3.3**	12.3-15.7	**3.3-4.2**	15.7-19.5	**4.2-5.2**

ypical Application Description
elative to work application)
ow Little or no use in mud, water or on rock. Use on level, regular surfaces.
ledium Typical pipelayer use in operating conditions ranging from very good to severe.
igh Continuous use in deep mud or water or on rock surfaces.

oad Factor Guide
verage engine load factor based on application description for each range)
ow 35%-50%
ledium 50%-65%
igh 65%-80%

OTOR GRADERS

odel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
SERIES						
120K	6.7-9.9	**1.8-2.6**	9.9-15.8	**2.6-4.2**	15.8-25.4	**4.2-6.7**
120K2	6.7-9.9	**1.8-2.6**	10.2 -16.3	**2.7-4.3**	16.8-25.7	**4.3-6.8**
12K	7.0-14.6	**1.9-3.9**	14.6-23.3	**3.9-6.2**	23.3-27.3	**6.2-7.2**
140K	7.3-13.4	**1.9-3.5**	13.4-21.4	**3.5-5.7**	21.4-27.8	**5.7-7.3**
140K2	7.3-13.4	**1.9-3.5**	13.4-21.4	**3.5-5.7**	21.4-27.8	**5.7-7.3**
160K	7.5-14.0	**2.0-3.7**	14.0-22.3	**3.7-5.9**	22.3-28.4	**5.9-7.5**
SERIES						
120M	7.8-8.2	**2.1-2.2**	8.2-13.0	**2.2-3.4**	13.0-22.3	**3.4-5.9**
120M2	8.3-9.1	**2.2-2.4**	9.1-14.8	**2.4-3.9**	14.8-25.4	**3.9-6.7**

120M2 AWD	9.8-11.0	**2.6-2.9**	11.0-17.8	**2.9-4.7**	17.8-25.7	**4.7-6.8**
12M	7.9-9.6	**2.1-2.5**	9.6-15.4	**2.5-4.1**	15.4-23.8	**4.1-6.3**
12M2	8.3-11.4	**2.2-3.0**	11.4-18.5	**3.0-4.9**	18.5-27.3	**4.9-7.2**
12M2 AWD	8.7-12.1	**2.3-3.2**	12.1-19.7	**3.2-5.2**	19.7-27.6	**5.2-7.3**
140M	8.2-12.5	**2.2-3.3**	12.5-20.0	**3.3-5.3**	20.0-28.4	**5.3-7.5**
140M AWD	8.6-14.6	**2.3-3.9**	14.6-23.3	**3.9-6.2**	23.3-30.0	**6.2-7.9**
140M2	8.7-12.9	**2.3-3.4**	12.9-21.2	**3.4-5.6**	21.2-29.5	**5.6-7.8**
140M2 AWD	9.1-14.0	**2.4-3.7**	14.0-22.7	**3.7-6.0**	22.7-30.7	**6.0-8.1**
160M	8.3-12.5	**2.2-3.3**	12.5-20.0	**3.3-5.3**	20.0-29.1	**5.3-7.7**
160M2	8.7-13.2	**2.3-3.5**	13.2-21.2	**3.5-5.6**	21.2-29.9	**5.6-7.9**
160M2 AWD	9.5-14.4	**2.5-3.8**	14.4-23.1	**3.8-6.1**	23.1-31.0	**6.1-8.2**
14M	10.0-14.3	**2.6-3.8**	14.3-22.8	**3.8-6.0**	22.8-39.7	**6.0-10.5**
16M	11.9-17.5	**3.1-4.6**	17.5-27.9	**4.6-7.4**	27.9-46.6	**7.4-12.3**
24M	24.6-40.8	**6.5-10.8**	40.8-65.2	**10.8-17.2**	65.2-83.3	**17.2-22.0**

E: The K Series Motor Graders meet U.S. EPATier 2 and EU Stage II emission standards.
The M Series Motor Graders meet U.S. EPATier 3 and EU Stage IIIA emission standards.
E: The Motor Grader hourly fuel rates are taken directly from customer machines registered on Product Link worldwide. Data from the top and bottom 5% of these customer machines has been excluded from the tables because it varies widely (15-60% from the extremes shown) and therefore is not considered representative of what the remaining 90% of customer experience. Hourly fuel consumption for the 90% of machines in the tables also varies depending upon geographical region, load factor variation between models, etc. Cat machines are often used in more demanding applications which can account for differences between competitive models used in lighter duty applications. M2 Series machine data is estimated since current Product Link data is immature on these models. These values are subject to change. Consult your local dealer for ways to more accurately estimate hourly fuel consumption for specific applications.

Typical Application Description
(relative to work application)

Low — Light road maintenance. Finish grading. Plant and road mix work. Large amounts of traveling. Light snow plowing.

Medium — Haul road maintenance. Average road maintenance, road mix work, scarifying. Road construction, ditching, loose fill spreading. Land forming, land leveling and elevating grader use. Medium to heavy snow removal.

High — Heavy maintenance of hard packed roads with embedded rock. Heavy fill spreading, base material spreading and ditching. Ripping/scarifying of asphalt or concrete. Continuous high load factor. High impact. Heavy snow plowing.

Load Factor Guide
(average engine load factor based on application description for each range)

Low 35%-50%
Medium 50%-65%
High 65%-80%

⑧ Hourly Fuel Consumption Tables
• Skid Steer Loaders, Multi Terrain Loaders and Compact Track Loaders

) STEER LOADERS, MULTI TERRAIN LOADERS AND COMPACT TRACK LOADERS

del	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
RLD WIDE MODELS						
72D	7.0-10.1	**1.9-2.7**	10.1-13.1	**2.7-3.5**	13.1-16.1	**3.5-4.3**
72D XHP	7.6-10.9	**2.0-2.9**	10.9-14.2	**2.9-3.7**	14.2-17.5	**3.7-4.6**
99D	7.0-10.1	**1.9-2.7**	10.1-13.1	**2.7-3.5**	13.1-16.1	**3.5-4.3**
99D XHP	7.6-10.9	**2.0-2.9**	10.9-14.2	**2.9-3.7**	14.2-17.5	**3.7-4.6**
**** MODELS**						
36D (HRC)	5.6-7.5	**1.4-2.0**	7.5-9.8	**2.0-2.6**	9.8-12.0	**2.6-3.2**
42D (HRC)	5.6-7.5	**1.4-2.0**	7.5-9.8	**2.0-2.6**	9.8-12.0	**2.6-3.2**
57D (HRC)	5.6-7.5	**1.4-2.0**	7.5-9.8	**2.0-2.6**	9.8-12.0	**2.6-3.2**
59D (HRC)	5.6-7.5	**1.4-2.0**	7.5-9.8	**2.0-2.6**	9.8-12.0	**2.6-3.2**
62D (HRC)	5.6-7.5	**1.4-2.0**	7.5-9.8	**2.0-2.6**	9.8-12.0	**2.6-3.2**
77D (HRC)	5.6-7.5	**1.4-2.0**	7.5-9.8	**2.0-2.6**	9.8-12.0	**2.6-3.2**
79D (HRC)	5.6-7.5	**1.4-2.0**	7.5-9.8	**2.0-2.6**	9.8-12.0	**2.6-3.2**
87D (HRC)	5.6-7.5	**1.4-2.0**	7.5-9.8	**2.0-2.6**	9.8-12.0	**2.6-3.2**
89D (HRC)	5.6-7.5	**1.4-2.0**	7.5-9.8	**2.0-2.6**	9.8-12.0	**2.6-3.2**
**** MODELS**						
36D (LRC)	5.7-8.1	**1.5-2.2**	8.1-10.6	**2.2-2.8**	10.6-13.0	**2.8-3.4**
42D (LRC)	5.7-8.1	**1.5-2.2**	8.1-10.6	**2.2-2.8**	10.6-13.0	**2.8-3.4**

57D (LRC)	5.7-8.1	**1.5-2.2**	8.1-10.6	**2.2-2.8**	10.6-13.0	**2.8-3.4**
59D (LRC)	5.7-8.1	**1.5-2.2**	8.1-10.6	**2.2-2.8**	10.6-13.0	**2.8-3.4**
62D (LRC)	5.7-8.1	**1.5-2.2**	8.1-10.6	**2.2-2.8**	10.6-13.0	**2.8-3.4**
77D (LRC)	5.7-8.1	**1.5-2.2**	8.1-10.6	**2.2-2.8**	10.6-13.0	**2.8-3.4**
79D (LRC)	5.7-8.1	**1.5-2.2**	8.1-10.6	**2.2-2.8**	10.6-13.0	**2.8-3.4**
87D (LRC)	5.7-8.1	**1.5-2.2**	8.1-10.6	**2.2-2.8**	10.6-13.0	**2.8-3.4**
89D (LRC)	5.7-8.1	**1.5-2.2**	8.1-10.6	**2.2-2.8**	10.6-13.0	**2.8-3.4**

– Higher Regulated Countries
– Lesser Regulated Countries

ypical Application Description
elative to work application)

ow — Light utility, construction, nursery and landscaping applications. Load and carry of free flowing, low density materials on firm, smooth surfaces for short distances with minimal grades. Light snow removal.

ledium — Industrial and construction job site applications. Loading from bank or load and carry of low to medium density materials on normal surfaces with low to medium rolling resistance and slight adverse grades. Occasional use of various attachments under normal loading conditions.

igh — Continuous industrial, construction and batch plant applications. Loading from tight banks or load and carry of high density materials on rough or very soft surfaces with high rolling resistance and adverse grades. Maximum use of high flow attachments under high loading conditions.

oad Factor Guide
verage engine load factor based on application description for each range)

ow 35%-50%
ledium 50%-65%
igh 65%-80%

2 Edition 44

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DERGROUND MINING — Hard Rock Articulated Trucks

odel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
30	27.0-38.0	**7.1-10.0**	38.0-45.0	**10.0-11.9**	45.0-56.0	**11.9-14.8**
45B	35.0–45.0	**9.2-11.9**	45.0-55.0	**11.9-14.5**	55.0-65.0	**14.5-17.2**
55 Flat Haul	35.0-42.0	**9.2-11.1**	42.0-57.0	**11.1-15.0**	57.0-70.0	**15.0-18.5**
60	45.0-55.0	**11.9-14.5**	55.0-65.0	**14.5-17.2**	65.0-80.0	**17.2-21.1**

Typical Application Description
relative to work application)

Low — Continuous operation at <80% of maximum recommended gross weight. Short to medium haul distances: 300-1000 m (**990-3300 feet**). Well maintained, level haul roads. Considerable amount of idling. Very few tray impacts. Low load factor.

Medium — Intermittent operation at less than maximum recommended gross weight. Medium to longer haul distances: 1000-5000 m (**3300-16,000 feet**). Varying haul road conditions with some adverse grades. Occasional tray impacts. Medium load factor.

High — Continuous operation at maximum recommended gross weight. Long haul distances: >5000 m (**>16,000 feet**). Poor haul road conditions with adverse/steep grades. Frequent tray impacts. High load factor.

Load Factor Guide
average engine load factor based on application description for each range)

Low 20%-40%
Medium 40%-60%
High 60%-80%

25

CAVATORS

odel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
HE D SERIES						
300.9D	0.9-1.4	**0.24-0.35**	1.4-1.8	**0.35-0.47**	1.8-2.3	**0.47-0.59**
301.7D	0.9-1.4	**0.24-0.35**	1.4-1.8	**0.35-0.47**	1.8-2.3	**0.47-0.59**
301.7D CR	0.9-1.4	**0.24-0.35**	1.4-1.8	**0.35-0.47**	1.8-2.3	**0.47-0.59**
302.4D	1.2-1.8	**0.31-0.47**	1.8-2.4	**0.47-0.62**	2.4-3.0	**0.62-0.78**
302.7D CR	1.2-1.8	**0.31-0.47**	1.8-2.4	**0.47-0.62**	2.4-3.0	**0.62-0.78**
303.5D CR	1.4-2.8	**0.4-0.7**	2.8-4.3	**0.7-1.1**	4.3-5.7	**1.1-1.5**
304D CR	2.0-3.9	**0.5-1.0**	3.9-5.9	**1.0-1.6**	5.9-7.8	**1.6-2.1**
305D CR	2.0-3.9	**0.5-1.0**	3.9-5.9	**1.0-1.6**	5.9-7.9	**1.6-2.1**
305.5D CR	2.2-4.4	**0.6-1.2**	4.4-6.6	**1.2-1.7**	6.6-8.8	**1.7-2.3**
307D	2.6-5.1	**0.7-1.3**	5.1-7.7	**1.3-2.0**	7.7-10.3	**2.0-2.7**
308D CR	2.6-5.1	**0.7-1.3**	5.1-7.07	**1.3-2.0**	7.7-10.3	**2.0-2.7**
HE E SERIES						
303E (Inside Japan only)	1.1-2.3	**0.3-0.6**	2.3-3.4	**0.6-0.9**	3.4-4.6	**0.9-1.2**
303.5E CR (HRC)	1.5-2.9	**0.4-0.8**	2.9-4.4	**0.8-1.2**	4.4-5.8	**1.2-1.5**
304E CR (HRC)	1.8-3.7	**0.5-1.0**	3.7-5.5	**1.0-1.5**	5.5-7.3	**1.5-1.9**
305E CR (HRC)	1.8-3.7	**0.5-1.0**	3.7-5.5	**1.0-1.5**	5.5-7.3	**1.5-1.9**
305.5E CR (HRC)	2.0-4.0	**0.5-1.1**	4.0-6.0	**1.1-1.6**	6.0-8.0	**1.6-2.1**
308E CR (HRC)	2.6-5.3	**0.7-1.4**	5.3-7.9	**1.4-2.1**	7.9-10.5	**2.1-2.8**
308E2 (HRC)	2.7-5.4	**0.7-1.4**	5.4-8.0	**1.4-2.1**	8.0-10.7	**2.1-2.8**
306E (LRC), 307E (LRC)	2.3-4.6	**0.6-1.2**	4.6-6.9	**1.2-1.8**	6.9-9.2	**1.8-2.4**
305.5E (LRC)	2.0-4.0	**0.5-1.1**	4.0-6.0	**1.1-1.6**	6.0-8.0	**1.6-2.1**
308E (LRC)	2.9-5.7	**0.8-1.5**	5.7-8.6	**1.5-2.3**	8.6-11.5	**2.3-3.0**
X D SERIES						
312D (Tier 3)	4.0-7.5	**1.1-2.0**	7.5-11.5	**2.0-3.0**	11.5-15.2	**3.0-4.0**
320D (STD Tier 3)	6.0-12.0	**1.6-3.2**	12.0-18.0	**3.2-4.8**	18.0-24.0	**4.8-6.3**
320D (HHP Tier 3)	6.5-12.5	**1.7-3.3**	12.5-18.5	**3.3-4.9**	18.5-24.8	**4.9-6.6**
321D CR (STD Tier 3)	6.0-12.0	**1.6-3.2**	12.0-18.0	**3.2-4.8**	18.0-24.0	**4.8-6.3**
321D CR (HHP Tier 3)	6.5-12.5	**1.7-3.3**	12.5-18.5	**3.3-4.9**	18.5-24.8	**4.9-6.6**
324D (STD Tier 2)	6.5-13.5	**1.7-3.6**	13.5-20.0	**3.6-5.3**	20.0-26.6	**5.3-7.0**
324D (HHP Tier 2)	7.5-15.5	**2.0-4.1**	15.5-23.0	**4.1-6.1**	23.0-30.4	**6.1-8.0**
324D (STD Tier 3)	7.0-14.0	**1.8-3.7**	14.0-21.0	**3.7-5.5**	21.0-28.0	**5.5-7.4**
324D (HHP Tier 3)	8.0-16.0	**2.1-4.2**	16.0-24.0	**4.2-6.3**	24.0-32.0	**6.3-8.5**
328D CR (Tier 3)	8.5-17.5	**2.2-4.6**	17.5-26.0	**4.6-6.9**	26.0-34.5	**6.9-9.1**
329D (STD Tier 2)	7.5-15.5	**2.0-4.1**	15.5-23.0	**4.1-6.1**	23.0-30.5	**6.1-8.1**
329D (HHP Tier 2)	8.5-16.5	**2.2-4.4**	16.5-24.5	**4.4-6.5**	24.5-33.0	**6.5-8.7**
329D (STD Tier 3)	8.0-16.0	**2.1-4.2**	16.0-24.0	**4.2-6.3**	24.0-32.0	**6.3-8.5**
329D (HHP Tier 3)	8.5-17.5	**2.2-4.6**	17.5-26.0	**4.6-6.9**	26.0-34.5	**6.9-9.1**
349D (Tier 2)	14.5-29.0	**3.8-7.7**	29.0-43.3	**7.7-11.4**	43.3-58.0	**11.4-15.3**
349D (Tier 3)	15.5-30.5	**4.1-8.1**	30.5-45.6	**8.1-12.0**	45.6-61.0	**12.0-16.1**

374D (Tier 2)	18.0-35.5	**4.8-9.4**	35.5-53.6	**9.4-14.2**	53.6-71.5	**14.2-18.9**
374D (Tier 3)	19.0-37.5	**5.0-9.9**	37.5-56.4	**9.9-14.9**	56.4-75.5	**14.9-19.9**
390D (C18 Tier 2)	19.5-38.5	**5.2-10.2**	38.5-58.0	**10.2-15.3**	58.0-77.0	**15.3-20.3**
390D (C18 Tier 3)	20.5-41.5	**5.4-11.0**	41.5-62.0	**11.0-16.4**	62.0-82.5	**16.4-21.8**

application of these machines is to be used for scrap handling, the LOW hourly fuel consumption rate would typically apply.
: Fuel consumption rates for 320D through 390D include machine at idle per load factor definition.

CAVATORS						
odel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
X D2 SERIES						
312D2 (STD Tier 2)	3.6-7.1	**1.0-1.9**	7.1-10.7	**1.9-2.8**	10.7-14.2	**2.8-3.8**
312D2 (ECO Tier 2)	3.1-6.2	**0.8-1.6**	6.2-9.3	**1.6-2.5**	9.3-12.4	**2.5-3.3**
312D2 GC (STD Tier 2)	3.1-6.2	**0.8-1.6**	6.2-9.3	**1.6-2.5**	9.3-12.4	**2.5-3.3**
313D2 (STD Tier 2)	3.6-7.1	**1.0-1.9**	7.1-10.7	**1.9-2.8**	10.7-14.2	**2.8-3.8**
313D2 (ECO Tier 2)	3.1-6.2	**0.8-1.6**	6.2-9.3	**1.6-2.5**	9.3-12.4	**2.5-3.3**
318D2 (STD Tier 2)	4.5-8.9	**1.2-2.4**	8.9-13.4	**2.4-3.5**	13.4-17.8	**3.5-4.7**
318D2 (ECO Tier 2)	3.9-7.8	**1.0-2.1**	7.8-11.8	**2.1-3.1**	11.8-15.7	**3.1-4.1**
320D2 (SHP Tier 2)	5.3-13.3	**1.4-3.5**	13.3-18.6	**3.5-4.9**	18.6-26.5	**4.9-7.0**
320D2 GC (STD Tier 2)	4.6-11.5	**1.2-3.0**	11.5-16.1	**3.0-4.3**	16.1-23.0	**4.3-6.1**
323D2 GC (HHP Tier 2)	5.4-13.5	**1.4-3.6**	13.5-18.9	**3.6-5.0**	18.9-27.0	**5.0-7.1**
336D2 (ECO Tier 2)	11.0-19.0	**2.9-5.0**	19.0-26.0	**5.0-6.9**	26.0-32.0	**6.9-8.5**
336D2 (HHP Tier 2)	14.0-24.0	**3.7-6.3**	24.0-33.0	**6.3-8.7**	33.0-41.0	**8.7-10.8**
336D2 (ECO Tier 3)	11.0-19.5	**2.9-5.1**	19.5-28.5	**5.1-7.5**	28.5-35.0	**7.5-9.2**
336D2 (HHP Tier 3)	14.0-25.0	**3.7-6.6**	24.0-36.0	**6.6-9.5**	36.0-44.5	**9.5-11.8**
X E SERIES						
312E (ECO Tier 4 Interim)	3.2-6.3	**0.8-1.7**	6.3-9.5	**1.7-2.5**	9.5-12.6	**2.5-3.3**
312E (HHP Tier 4 Interim)	3.6-7.1	**1.0-1.9**	7.1-10.7	**1.9-2.8**	10.7-14.2	**2.8-3.7**
314E (HHP Tier 4 Interim)	3.1-6.2	**0.8-1.6**	6.2-9.3	**1.6-2.5**	9.3-12.4	**2.5-3.3**
314E (ECO Tier 4 Interim)	2.9-5.7	**0.8-1.5**	5.7-8.6	**1.5-2.3**	8.6-11.5	**2.3-3.0**
314EL (HHP Tier 4 Interim)	3.4-6.8	**0.9-1.8**	6.8-10.2	**1.8-2.7**	10.2-13.7	**2.7-3.6**
314EL (ECO Tier 4 Interim)	2.7-5.4	**0.7-1.4**	5.4-8.1	**1.4-2.1**	8.1-10.8	**2.1-2.8**
316E (ECO Tier 4 Interim)	3.9-7.8	**1.0-2.1**	7.8-11.7	**2.1-3.1**	11.7-15.7	**3.1-4.1**
316E (HPP Tier 4 Interim)	4.5-9.1	**1.2-2.4**	9.1-13.6	**2.4-3.6**	13.6-18.2	**3.6-4.8**
318E (ECO Tier 4 Interim)	3.9-7.8	**1.0-2.1**	7.8-11.7	**2.1-3.1**	11.7-15.7	**3.1-4.1**
318E (HPP Tier 4 Interim)	4.5-9.1	**1.2-2.4**	9.1-13.6	**2.4-3.6**	13.6-18.2	**3.6-4.8**
320E (ECO Tier 4 Interim)	4.6-9.2	**1.2-2.4**	9.2-13.8	**2.4-3.5**	13.8-18.3	**3.5-4.7**
320E (STD Tier 4 Interim)	5.5-11.0	**1.4-2.8**	11.0-16.4	**2.8-4.2**	16.4-21.9	**4.2-21.9**
320E (HHP Tier 4 Interim)	5.9-11.9	**1.5-3.1**	11.9-17.8	**3.1-4.6**	17.8-23.8	**4.6-6.1**
323E (ECO Tier 4 Interim)	4.6-9.2	**1.2-2.4**	9.2-13.8	**2.4-3.5**	13.8-18.3	**3.5-4.7**
323E (STD Tier 4 Interim)	5.5-11.0	**1.4-2.8**	11.0-16.4	**2.8-4.2**	16.4-21.9	**4.2-21.9**
323E (HHP Tier 4 Interim)	5.9-11.9	**1.5-3.1**	11.9-17.8	**3.1-4.6**	17.8-23.8	**4.6-6.1**
324E (ECO Tier 4 Interim)	5.7-11.4	**1.5-2.9**	11.4-17.1	**2.9-4.4**	17.1-22.9	**4.4-5.9**
324E (STD Tier 4 Interim)	6.4-12.8	**1.6-3.3**	12.8-19.2	**3.3-4.9**	19.2-25.6	**4.9-6.6**
324E (HHP Tier 4 Interim)	7.2-14.4	**1.9-3.7**	14.4-21.6	**3.7-5.6**	21.6-28.9	**5.6-7.4**
329E (ECO Tier 4 Interim)	6.8-13.5	**1.7-3.5**	13.5-20.3	**3.5-5.2**	20.3-27.0	**5.2-6.9**
329E (STD Tier 4 Interim)	7.3-14.6	**1.9-3.8**	14.6-21.9	**3.8-5.6**	21.9-29.2	**5.6-7.5**
329E (HHP Tier 4 Interim)	8.6-17.1	**2.2-4.4**	17.1-25.7	**4.4-6.6**	25.7-34.3	**6.6-8.8**
336E (ECO Tier 4 Interim)	9.5-19.0	**2.5-5.0**	19.0-29.0	**5.0-7.7**	29.0-38.0	**7.7-10.0**
336E (STD Tier 4 Interim)	10.5-21.5	**2.8-5.7**	21.5-32.0	**5.7-8.5**	32.0-42.0	**8.5-11.1**
336E (HHP Tier 4 Interim)	12.0-24.0	**3.2-6.3**	24.0-36.0	**6.3-9.5**	36.0-47.5	**9.5-12.5**
336EH (ECO Tier 4 Interim)	12.0-20.5	**3.2-5.4**	20.5-29.5	**5.4-7.8**	29.5-41.0	**7.8-10.8**
336EH (STD Tier 4 Interim)	13.0-22.0	**3.4-5.8**	22.0-31.5	**5.8-8.3**	31.5-44.0	**8.3-11.6**
336EH (HHP Tier 4 Interim)	14.5-25.0	**3.8-6.6**	25.0-36.0	**6.6-9.5**	36.0-50.0	**9.5-13.2**
349E (C13 Tier 4 Interim)	15.0-30.5	**4.0-8.1**	30.5-45.5	**8.1-12.0**	45.5-60.5	**12.0-16.0**

CAVATORS

odel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
ACK MATERIAL HANDLERS						
385C MH	48-60	**12.7-15.8**	60-74	**15.8-19.5**	74-82	**19.5-21.7**
HEEL HEX AND ATERIAL HANDLER						
M313D	8.0-12.0	**2.1-3.2**	12.0-16.0	**3.2-4.2**	16.0-19.0	**4.2-5.0**
M315D	9.0-13.0	**2.4-3.4**	13.0-18.0	**3.4-4.8**	18.0-21.0	**4.8-5.5**
M316D	8.0-12.0	**2.1-3.2**	12.0-17.0	**3.2-4.5**	17.0-20.0	**4.5-5.3**
M318D	9.0-13.0	**2.4-3.4**	13.0-18.0	**3.4-4.8**	18.0-22.0	**4.8-5.8**
M318D MH	—	—	—	—	—	—
M322D	11.0-17.0	**2.9-4.5**	17.0-23.0	**4.5-6.1**	23.0-26.0	**6.0-6.9**
M322D MH	—	—	—	—	—	—
M325D MH	13-18	**3.4-4.8**	19-23	**5.0-6.1**	24-28	**6.3-7.4**
M325D LMH	14-20	**3.7-5.3**	21-26	**5.5-6.9**	27-32	**7.1-8.5**
MH3037	15-17	**4.0-4.5**	18-20	**4.8-5.3**	21-23	**5.5-6.1**
MH3049	17-19	**4.5-5.0**	20-22	**5.3-5.8**	23-25	**6.1-6.6**
MH3059	20-22	**5.3-5.8**	23-25	**6.1-6.6**	26-28	**6.9-7.4**

Mini HEX

ypical Application Description

relative to work application)

ow — Mostly shallow depth urban utility construction where excavator sets pipe and digs in sandy loam or free flowing, low density material. Little traveling and little or no impact.

Medium — Most residential pipeline and cabling applications. Continuous mass excavation and trenching in natural bed clay soils. Some traveling and steady, full throttle operation.

igh — Continuous trenching or truck loading in rock or shot rock soils. Most pipeline applications in hard rocky material. Large amount of travel over rough ground. Constant high load factor and high impact.

oad Factor Guide

average engine load factor based on application description for each range)

ow — 20%-40%

Medium — 40%-60%

igh — 60%-80%

0 Series
pical Application Description
elative to work application)

ow	Mostly shallow depth urban utility construction where excavator sets pipe and digs less than 50% of the daily work schedule. Sandy loam, free flowing, low density material. Little traveling and little or no impact.
edium	Most residential sewer applications. Continuous mass excavation and trenching in natural bed clay soils. Digging 60-85% of the daily work schedule. Most log loading applications. Some traveling and steady, full throttle operation.
gh	Continuous trenching or truck loading in rock or shot rock soils. Most pipeline applications in hard rocky material. Digging 90-95% of the daily work schedule. Large amount of travel over rough ground. Working on rock floor with constant high load factor and high impact.

oad Factor Guide (Tier 2, Tier 3 and Tier 4 Interim HEXSM, only)
verage engine load factor based on application description for each range)

ow	20%-40%
edium	40%-60%
gh	60%-80%

Series
pical Application Description
elative to work application)

ow	Urban utility construction application in sandy loam, low density material. Digging less than 50% of the daily work schedule. Rehandling and scrap handling applications.
edium	Residential sewer applications in natural bed clay. Continuous digging in sandy clay/gravel. Digging 60-85% of the daily work schedule. Site development and lumber yard applications. Most logging applications.
gh	Pipeline applications in hard rocky material. Continuous digging in rock/natural bed clay. Digging 90-95% of the daily work schedule. High impact, using hammer, working in forests and quarries.

oad Factor Guide
verage engine load factor based on application description for each range)

ow	20%-40%
edium	40%-60%
gh	60%-80%

ONT SHOVELS

odel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
90	43.0-48.0	**11.4-12.7**	62.0-68.0	**16.4-18.0**	71.0-78.0	**18.8-20.6**
30B (Tier 1)	—	—	120.2	**31.6**	160.3	**42.2**
30B (Tier 1)	—	—	232.5	**61.2**	310.0	**81.6**

Typical Application Description
relative to work application)

Low — Continuous loading in loose banks or stockpile. Light, easy work with, considerable idling. Good underfoot conditions.

Medium — Continuous loading in well-shot rock or fairly tight bank. Steady cycling with frequent periods of idle. Good underfoot conditions; dry floor, little impact or sliding on undercarriage. Minimal travel time (3%-6%).

High — Continuous loading in poorly-shot rock, virgin or lightly-blasted tight banks. Steady cycling in hard to dig material. Adverse underfoot conditions; rough floors, high impact and/or sliding on undercarriage.

Load Factor Guide
average engine load factor based on application description for each range)

Low 20%-50%
Medium 50%-80%
High 80%-100%

DRAULIC MINING SHOVELS

odel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
15/6015 FS	66-80	**17-21**	80-93	**21-25**	93-106	**25-28**
18/6018 FS	105-126	**28-33**	126-147	**33-39**	147-168	**39-44**
30/6030 FS	134-161	**35-43**	161-188	**43-50**	188-215	**50-57**
40/6040 FS	180-216	**48-57**	216-252	**57-67**	252-288	**67-76**
50/6050 FS	229-275	**60-73**	275-321	**73-85**	321-367	**85-97**
60/6060 FS	276-331	**73-87**	331-387	**87-102**	387-442	**102-117**
90 FS	402-483	**106-128**	483-563	**128-149**	563-644	**149-170**

Typical Application Description
relative to work application)

Low — Light duty work with a considerable amount of idling.

Medium — Continuous loading operations with frequent idling periods. (Applies for the vast majority of applications)

High — Continuous hard digging operations with rare idling periods.

Load Factor Guide
average engine load factor based on application description for each range)

Low 50%-60%
Medium 60%-70%
High 70%-80%

HEEL TRACTOR-SCRAPERS

odel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
1H Tier 4 Final*	28.0-39.4	**7.4-10.4**	39.4-50.7	**10.4-13.4**	50.7-62.1	**13.4-16.4**
3K Tier 4 Final*	32.2-43.2	**8.5-11.4**	43.2-54.5	**11.4-14.4**	54.5-68.1	**14.4-18.0**
7K Tier 4 Final*	42.0-61.7	**11.1-16.3**	61.7-81.4	**16.3-21.5**	81.4-106.7	**21.5-28.2**
1G Tier 3	34.1-48.5	**9.0-12.8**	48.5-62.8	**12.8-16.6**	62.8-77.6	**16.6-20.5**

7G Tier 3	48.8-72.1	**12.9-19.1**	72.3-95.8	**19.1-25.3**	95.8-125.3	**25.3-33.1**
7G Tier 3	66.6-98.8	**17.6-26.1**	98.8-131.0	**26.1-34.6**	131.0-163.2	**34.6-43.1**

hine requires the use of DEF fluid with a consumption rate approximately 2-3% of diesel fuel.

Typical Application Description
(relative to work application)

Low — Level or favorable grades on good haul roads and low rolling resistance. Easy-loading materials, partial loads. No impact. Average use, but with considerable idling.

Medium — Adverse and favorable grades with varying loading and haul road conditions. Long and short hauls, near full. Some impact. Typical road building use.

High — Rough haul roads. Loading heavy clay, continuous high total resistance conditions with steady cycling. Overloading. High impact conditions, such as loading ripped rock.

Load Factor Guide
(average engine load factor based on application description for each range)

Low 35%-50%
Medium 50%-65%
High 65%-80%

CKHOE LOADERS

odel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
6E (Tier 2) 56 kW/**75 hp**	1.9-7.9	**0.5-2.1**	7.9-12.1	**2.1-3.2**	12.1-14.4	**3.2-3.8**
6E (Tier 2) 68.5 kW/**92 hp**	2.6-11.7	**0.7-3.1**	11.7-16.7	**3.1-4.4**	16.7-18.9	**4.4-5.0**
6F (Tier 4 Interim) 70 kW/**94 hp**	2.6-12.4	**0.7-3.3**	12.4-17.4	**3.3-4.6**	17.4-19.0	**4.6-5.0**
0F (Tier 2) 74.5 kW/**100 hp**	2.6-11.7	**0.7-3.1**	11.7-17.4	**3.1-4.6**	17.4-20.1	**4.6-5.3**
0F (Tier 4 Interim) 74.5 kW/**100 hp**	2.9-13.6	**0.8-3.6**	13.6-18.9	**3.6-5.0**	18.9-19.7	**5.0-5.2**
2F (Tier 2) 56.5 kW/**75 hp**	1.9-7.9	**0.5-2.1**	7.9-12.1	**2.1-3.2**	12.1-14.4	**3.2-3.8**
2F (Tier 2) 68.5 kW/**92 hp**	2.6-11.7	**0.7-3.1**	11.7-16.7	**3.1-4.4**	16.7-18.9	**4.4-5.0**
8F (Tier 2) 70 kW/**94 hp**	2.6-11.0	**0.7-2.9**	11.0-16.7	**2.9-4.4**	16.7-19.3	**4.4-5.1**
8F (Tier 2) 74.5 kW/**100 hp**	2.6-11.7	**0.7-3.1**	11.7-17.4	**3.1-4.6**	17.4-20.1	**4.6-5.3**
8F (Stage 3a) 70 kW/**94 hp**	2.6-11.0	**0.7-2.9**	11.0-16.7	**2.9-4.4**	16.7-19.3	**4.4-5.1**
8F (Stage 3a) 74.5 kW/**100 hp**	2.6-11.4	**0.7-3.0**	11.4-17.0	**3.0-4.5**	17.0-20.8	**4.5-5.5**
8F (Stage 3b) 70 kW/**94 hp**	2.6-12.4	**0.7-3.3**	12.4-17.4	**3.3-4.6**	17.4-19.0	**4.6-5.0**
8F (Stage 3b) 74.5 kW/**100 hp**	2.9-13.6	**0.8-3.6**	13.6-18.9	**3.6-5.0**	18.9-19.7	**5.0-5.2**
0F (Tier 2) 74.5 kW/**100 hp**	2.6-11.7	**0.7-3.1**	11.7-17.4	**3.1-4.6**	17.4-20.1	**4.6-5.3**
0F (Tier 4 Interim) 86 kW/**115 hp**	3.1-14.8	**0.8-3.9**	14.8-20.9	**3.9-5.5**	20.9-22.8	**5.5-6.0**
2F (Tier 2) 74.5 kW/**100 hp**	2.6-11.7	**0.7-3.1**	11.7-17.4	**3.1-4.6**	17.4-20.1	**4.6-5.3**
2F (Stage 3a) 74.5 kW/**100 hp**	2.6-11.4	**0.7-3.0**	11.4-17.0	**3.0-4.5**	17.0-20.8	**4.5-5.5**
2F (Stage 3b) 82 kW/**110 hp**	2.9-13.7	**0.8-3.6**	13.7-19.0	**3.6-5.0**	19.0-21.9	**5.0-5.8**
4F (Tier 2) 68.5 kW/**92 hp**	2.6-11.7	**0.7-3.1**	11.7-16.7	**3.1-4.4**	16.7-18.9	**4.4-5.0**
4F (Tier 2) 74.5 kW/**100 hp**	2.6-11.7	**0.7-3.1**	11.7-17.4	**3.1-4.6**	17.4-20.1	**4.6-5.3**
4F (Stage 3a) 70 kW/**94 hp**	2.6-11.0	**0.7-2.9**	11.0-16.7	**2.9-4.4**	16.7-19.3	**4.4-5.1**
4F (Stage 3a) 74.5 kW/**100 hp**	2.6-11.4	**0.7-3.0**	11.4-17.0	**3.0-4.5**	17.0-20.8	**4.5-5.5**
4F (Stage 3b) 74.5 kW/**100 hp**	2.9-13.6	**0.8-3.6**	13.6-18.9	**3.6-5.0**	18.9-19.7	**5.0-5.2**
4F (Tier 2) 74.5 kW/**100 hp**	2.6-11.7	**0.7-3.1**	11.7-17.4	**3.1-4.6**	17.4-20.1	**4.6-5.3**
4F (Stage 3a) 74.5 kW/**100 hp**	2.6-11.4	**0.7-3.0**	11.4-17.0	**3.0-4.5**	17.0-20.8	**4.5-5.5**
4F (Stage 3b) 82 kW/**110 hp**	2.9-13.7	**0.8-3.6**	13.7-19.0	**3.6-5.0**	19.0-21.9	**5.0-5.8**
0E (Tier 3) 102 kW/**137 hp**	3.1-13.6	**0.8-3.6**	13.6-21.9	**3.6-5.8**	21.9-26.1	**5.8-6.9**
0F (Tier 4 Interim) 106 kW/**142 hp**	3.3-16.2	**0.9-4.3**	16.2-23.1	**4.3-6.1**	23.1-27.1	**6.1-7.2**

4.01

Backhoe Loaders
Typical Application Description
(relative to work application)

Low — Light duty utility applications with intermittent cycles in light to medium soil. Trenching depths less than 1.83 m (**6 feet**).

Medium — General utility applications with regular cycles in medium to heavy soil. Dig depths to 3.05 m (**10 feet**). Occasional use of constant flow implements.

High — Production applications or digging in rock. Dig depths over 3.05 m (**10 feet**). Long cycle times or regular use of constant flow implements.

Load Factor Guide
(average engine load factor based on application description for each range)

Low 20%-40%
Medium 40%-65%
High 65%-80%

REST PRODUCTS

lodel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
OREST MACHINE						
320D FM	11.5-14.0	**3.0-3.7**	17.0-19.0	**4.5-5.0**	20.5-22.5	**5.4-6.0**
322C LL	25.0-28.0	**6.5-7.5**	26.0-29.0	**7.0-7.5**	27.0-30.0	**7.5-8.0**
324D FM	14.0-19.0	**3.7-5.1**	23.0-27.0	**6.1-7.1**	27.0-32.0	**7.2-8.5**
325C LL	26.0-29.0	**7.0-7.5**	27.0-30.0	**7.0-8.0**	29.0-32.0	**7.5-8.5**
325D FM	14.0-19.0	**3.7-5.1**	23.0-27.0	**6.1-7.1**	27.0-32.0	**7.2-8.5**
330C LL	36.0-40.0	**9.5-10.5**	37.0-41.0	**10.0-11.0**	38.0-42.0	**10.0-11.0**
330D FM	19.0-24.0	**5.0-6.3**	29.0-33.0	**7.7-8.7**	34.0-39.0	**9.0-10.3**
568 LL Tier 4	19.0-24.0	**5.0-6.3**	29.0-33.0	**7.7-8.7**	34.0-39.0	**9.0-10.3**
568 GF Tier 4	19.0-24.0	**5.0-6.3**	29.0-33.0	**7.7-8.7**	34.0-39.0	**9.0-10.3**
RACK FELLER BUNCHER						
511 (2290)	25.0-28.0	**6.5-7.5**	28.0-34.0	**7.5-9.0**	36.0-42.0	**9.5-11.0**
521 (2390)	27.0-33.0	**7.0-8.5**	33.0-36.0	**8.5-9.5**	36.0-44.0	**9.5-11.5**
522 (2391)	27.0-33.0	**7.0-8.5**	33.0-36.0	**8.5-9.5**	36.0-44.0	**9.5-11.5**
532 (2491)	28.0-34.0	**7.5-9.0**	34.0-38.0	**9.0-10.0**	38.0-45.0	**10.0-12.0**
541 Series 2Tier 3 (2590)	28.0-34.0	**7.5-9.0**	34.0-38.0	**9.0-10.0**	38.0-45.0	**10.0-12.0**
551	28.0-34.0	**7.5-9.0**	34.0-38.0	**9.0-10.0**	38.0-45.0	**10.0-12.0**
552 Series 2Tier 3	30.0-34.0	**8.0-9.0**	34.0-40.0	**9.0-10.5**	40.0-49.0	**10.5-13.0**
/HEEL FELLER BUNCHER						
553CTier 3	18.9-22.7	**5.0-6.0**	22.7-26.5	**6.0-7.0**	26.5-32.2	**7.0-8.5**
563CTier 4 Interim	18.9-22.7	**5.0-6.0**	22.7-26.5	**6.0-7.0**	26.5-32.2	**7.0-8.5**
573CTier 4 Interim	18.9-22.7	**5.0-6.0**	22.7-26.5	**6.0-7.0**	26.5-32.2	**7.0-8.5**
RACK SKIDDERS						
527	13.2-18.9	**3.5-5.0**	18.9-23.6	**5.0-6.25**	23.6-32.2	**6.25-8.5**
/HEEL SKIDDERS						
525C	17.0-18.9	**4.5-5.0**	18.9-20.8	**5.0-5.5**	20.8-24.6	**5.5-6.5**
535C	17.4-19.7	**4.6-5.2**	19.7-22.0	**5.2-5.8**	22.0-25.4	**5.8-6.7**
545C	18.2-20.1	**4.8-5.3**	20.1-22.0	**5.3-5.8**	22.0-28.0	**5.8-7.4**
NUCKLEBOOM LOADER						
529 Tier 3	12.04	**3.31**	19.47	**5.36**	25.58	**7.04**
559C Tier 4 Interim	12.91	**3.55**	19.69	**5.42**	25.96	**7.15**
579 Tier 4 Interim	12.91	**3.55**	19.69	**5.42**	25.96	**7.15**
RACK HARVESTER						
501HD Tier 3	14.0	**3.7**	16.3	**4.3**	20.8	**5.5**
/HEEL HARVESTER	—	—	—	—	—	—
ORWARDERS						
564 Tier 3	13.2	**3.5**	15.0	**4.0**	17.0	**4.5**
574 Tier 3	14.4	**3.8**	15.9	**4.2**	17.8	**4.7**
584 Tier 3	12.5	**3.3**	14.0	**3.7**	17.0	**4.5**
584HD Tier 3	13.0	**3.4**	14.3	**3.8**	18.9	**5.0**

6.09

Wheel Skidders
Typical Application Description
relative to work application)

.ow	Intermittent skidding for short distances, no decking. Good underfoot conditions; dry floor, few if any stumps, flat/level terrain with low skidding resistance.
Medium	Continuous turning, steady skidding for medium distances with moderate decking. Good underfoot conditions; dry floor with few stumps, gradual rolling/moderate terrain with medium skidding resistance.
High	Continuous turning, steady skidding for long distances with frequent decking. Poor underfoot conditions; wet floor, numerous stumps, steep terrain with high skidding resistance.

.oad Factor Guide — 517

.ow	Skidding loads less than 4536 kg **(10,000 lb)** in flat terrain (0-8% grade) with low skidding resistance.
Medium	Skidding loads up to 4536 kg **(10,000 lb)** in moderate terrain (8-30% grade) with medium skidding resistance.
High	Skidding loads over 4536 kg **(10,000 lb)** in steep terrain (over 30% grade) with high skidding resistance.

.oad Factor Guide — 525B

.ow	Skidding loads less than 4500 kg **(10,000 lb)** in flat terrain (0-5% grade) with low skidding resistance.
Medium	Skidding loads up to 6800 kg **(15,000 lb)** in moderate terrain (5-10% grade) with average skidding resistance

High	Skidding loads over 6800 kg (**15,000 lb**) in steep terrain (over 10% grade) with high skidding resistance.

Load Factor Guide — 527

Low	Skidding loads less than 6360 kg (**14,000 lb**) in flat terrain (0-8% grade) with low skidding resistance.
Medium	Skidding loads up to 6360 kg (**14,000 lb**) in moderate terrain (8-30% grade) with medium skidding resistance.
High	Skidding loads over 6360 kg (**14,000 lb**) in steep terrain (over 30% grade) with high skidding resistance.

NING & OFF-HIGHWAY TRUCKS

odel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
'0G Tier 4 Final†	19.7-29.5	**5.2-7.7**	29.5-39.3	**7.7-10.3**	39.3-49.2	**10.3-12.9**
'0G	18.3-27.5	**4.8-7.3**	27.5-36.6	**7.3-9.7**	36.6-45.8	**9.7-12.1**
'2G Tier 4 Final†	23.5-35.3	**6.2-9.3**	35.3-47.1	**9.3-12.4**	47.1-58.9	**12.4-15.4**
'2G	22.0-32.9	**5.8-8.7**	32.9-43.9	**8.7-11.6**	43.9-54.9	**11.6-14.5**
'3E	27.4-41.2	**7.2-10.9**	41.2-54.9	**10.9-14.5**	54.9-68.6	**14.5-18.1**
'3G	29.0-43.5	**7.7-11.5**	43.5-58.0	**11.5-15.3**	58.0-72.5	**15.3-19.2**
'3G Tier 4 Final	29.0-43.5	**7.7-11.5**	43.5-58.1	**11.5-15.4**	58.1-72.6	**15.4-19.2**
'5G	30.9-46.3	**8.2-12.2**	46.3-61.7	**12.2-16.3**	61.7-77.1	**16.3-20.4**
'5G Tier 4 Final	30.9-46.4	**8.2-12.3**	46.4-61.9	**12.3-16.4**	61.9-77.4	**16.4-20.4**
'7D	37.5-56.3	**9.9-14.9**	56.3-75.0	**14.9-19.8**	75.0-93.8	**19.8-24.8**
'7G	37.5-56.2	**9.9-14.8**	56.2-75.0	**14.8-19.8**	75.0-93.7	**19.8-24.8**
'7G Tier 4 Final	38.7-58.0	**10.2-15.3**	58.0-77.4	**15.3-20.4**	77.4-96.7	**20.4-25.5**
35C**	53.7-80.6	**14.2-21.3**	80.6-107.5	**21.3-28.4**	107.5-134.4	**28.4-35.5**
35D****	54.2-81.4	**14.3-21.5**	81.4-108.5	**21.5-28.7**	108.5-135.6	**28.7-35.8**
39D 1900 HP**	70.6-105.9	**18.7-28.0**	105.9-141.2	**28.0-37.3**	141.2-176.5	**37.3-46.6**
39D 2100 HP*	74.9-112.4	**19.8-29.7**	112.4-149.9	**29.7-39.6**	149.9-187.4	**39.6-49.5**
39D 2100 HP****	79.7-119.5	**21.1-31.6**	119.5-159.3	**31.6-42.1**	159.3-199.1	**42.1-52.6**
33D**	90.8-136.2	**24.0-36.0**	136.2-181.6	**36.0-48.0**	181.6-227.0	**48.0-60.0**
T4400D AC****	89.1-133.6	**23.5-35.3**	133.6-178.1	**35.3-47.0**	178.1-222.6	**47.0-58.8**
33F****	96.7-145.0	**25.5-38.3**	145.0-193.3	**38.3-51.1**	193.3-241.7	**51.1-63.9**
33F HAA	90.7-136.0	**24.0-35.9**	136.0-181.4	**35.9-47.9**	181.4-226.7	**47.9-59.9**
35F****	123.3-184.9	**32.6-48.9**	184.9-246.6	**48.9-65.2**	246.6-308.2	**65.2-81.4**
T5300D AC****	126.1-189.3	**33.3-50.0**	189.3-252.1	**50.0-66.6**	252.1-315.3	**66.6-83.3**
37F****	146.8-220.3	**38.8-58.2**	220.3-293.7	**58.2-77.6**	293.7-367.1	**77.6-97.0**
37F HAA***	147.9-221.8	**39.1-58.6**	221.8-295.8	**58.6-78.2**	295.8-369.7	**78.2-97.7**

EPA Tier 1 Capable.
EPA Tier 1 Certified.
EPA Tier 2 Capable.
EPA Tier 2 Certified.
Machine requires the use of DEF fluid with a consumption rate approximately 2-3% of diesel fuel.
E: Load factors above 50% may be experienced in many applications.

Typical Application Description

(relative to work application)

Low — Continuous operation at an average gross weight less than recommended. Excellent haul roads. No overloading, low load factor.

Medium — Continuous operation at an average gross weight approaching recommended. Minimal overloading, good haul roads, moderate load factor.

High — Continuous operation at or above maximum recommended gross weight. Overloading, poor haul roads, high load factor.

Load Factor Guide

(average engine load factor based on application description for each range)

Low 20%-30%

Medium 30%-40%

High 40%-50%

E: For best results, use Caterpillar Fleet Production and Cost Analysis (FPC) to simulate cycle time, fuel burn, and production. For Application Specific Performance inquiries, contact Factory Representative or visit catminer.cat.com/stb for more information.

.EHANDLERS

odel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
l210	5.1-6.8	1.3-1.8	8.5-10.1	2.2-2.6	11.8-13.5	3.1-3.5
l215	5.1-6.8	1.3-1.8	8.5-10.1	2.2-2.6	11.8-13.5	3.1-3.5
l220B (59-74 kW/80-99 hp)	5.0-7.0	1.3-1.8	10.0-14.0	2.6-3.7	13.0-17.0	3.4-4.5
l220B (92 kW/123 hp)	5.0-8.0	1.3-2.1	10.0-16.0	2.6-4.2	13.0-20.0	3.4-5.3
l330B (59-74 kW/80-99 hp)	5.0-7.0	1.3-1.8	10.0-14.0	2.6-3.7	13.0-17.0	3.4-4.5
l330B (92 kW/123 hp)	5.0-8.0	1.3-2.1	10.0-16.0	2.6-4.2	13.0-20.0	3.4-5.3
l340B	5.0-7.0	1.3-1.8	10.0-14.0	2.6-3.7	13.0-17.0	3.4-4.5
l350B	5.0-7.0	1.3-1.8	10.0-14.0	2.6-3.7	13.0-17.0	3.4-4.5
l355B	5.0-7.0	1.3-1.8	10.0-14.0	2.6-3.7	13.0-17.0	3.4-4.5
l360B	5.0-7.0	1.3-1.8	10.0-14.0	2.6-3.7	13.0-17.0	3.4-4.5
l460B	5.0-7.0	1.3-1.8	10.0-14.0	2.6-3.7	13.0-17.0	3.4-4.5
l560B (59-74 kW/80-99 hp)	5.0-9.0	1.3-2.4	10.0-15.0	2.6-4.0	13.0-17.5	3.4-4.6
l560B (92 kW/123 hp)	5.0-9.0	1.3-2.4	10.0-17.0	2.6-4.5	13.0-21.0	3.4-5.5
l580B	5.0-6.0	1.3-1.6	9.0-10.7	2.4-2.8	16.0-18.3	4.2-4.8

Typical Application Description

relative to work application)

Low — Light to moderate, intermittent, utility applications with frequent periods of idling and limited travel.

Medium — General construction applications with moderate amounts of travel.

High — Continuous production applications with near capacity loading and extended lifts.

Load Factor Guide

average engine load factor based on application description for each range)

Low 20%-30%

Medium 30%-40%

High 40%-50%

EEL DOZERS/SOIL COMPACTORS/LANDFILL COMPACTORS

odel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
4F	21.0-25.0	**5.5-6.5**	26.0-30.0	**7.0-8.0**	36.0-40.0	**9.5-10.5**
5F	26.0-30.0	**7.0-8.0**	36.0-42.0	**9.5-11.0**	44.0-47.0	**11.5-12.5**
6F	26.0-30.0	**7.0-8.0**	36.0-42.0	**9.5-11.0**	44.0-47.0	**11.5-12.5**
4H	28.9-33.8	**7.9-8.9**	39.8-45.8	**10.5-12.1**	53.7-59.7	**14.2-15.8**
5H	37.8-43.8	**10.0-11.6**	53.7-67.3	**14.2-17.8**	63.7-69.7	**16.8-18.4**
6H	34.0-35.8	**8.4-9.4**	39.8-43.8	**10.5-11.6**	47.8-51.7	**12.6-13.6**
4K	34.6-43.4	**9.1-11.4**	48.2-52.2	**12.7-13.8**	67.6-74.0	**17.8-19.5**
6H	39.8-43.8	**10.5-11.6**	47.8-51.7	**12.6-14.0**	55.7-59.7	**14.7-18.0**
4H	42.0-50.0	**11.0-13.0**	54.0-62.0	**14.0-16.0**	65.0-73.0	**17.0-19.0**
4K	49.2-64.4	**13.0-17.0**	64.4-79.5	**17.0-21.0**	79.5-94.6	**21.0-25.0**

Wheel Dozers
Typical Application Description
(relative to work application)

Low — Light utility and stockpile work. Pulling compactors. Dozing loose fill. Considerable idling or travel with no load and no impact.

Medium — Production dozing, push loading in clays, sands, silts, loose gravels. Shovel clean-up. Normal compaction.

High — Heavy production dozing in rock. Push-loading in rocky, bouldery borrow pits. Heavy landfill compactor work. High impact conditions.

Load Factor Guide
(average engine load factor based on application description for each range)

Low 35%-50%
Medium 50%-65%
High 65%-80%

Soil Compactors/Landfill Compactors
Typical Application Description
(relative to work application)

Low — No dozing or very light spreading on a flat or downhill surface. Machine has support equipment dozing and spreading trash while compactor simply travels over flat surface multiple times.

Medium — Compactor primary use is compacting already spread material. Compactor assists in dozing and spreading during peak periods of day and possibly working slopes of no steeper than a 4:1.

High — Compactor is possibly only machine for operation. Machine will doze and spread material alone and then compact it with multiple passes working on steep slopes and possibly uphill.

Load Factor Guide
(average engine load factor based on application description for each range)

Low 35%-50%
Medium 50%-65%
High 65%-80%

MPACTION EQUIPMENT						
odel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
IL COMPACTORS						
CS-323C	8.0-13.0	**2.0-3.5**	11.0-15.0	**3.0-4.0**	11.0-19.0	**3.0-5.0**
CP-323C	8.0-13.0	**2.0-3.5**	11.0-15.0	**3.0-4.0**	11.0-19.0	**3.0-5.0**
CS-431C	8.0-11.0	**2.0-3.0**	11.0-13.0	**3.0-3.5**	11.0-15.0	**3.0-4.0**
CS-531D	11.0-13.0	**3.0-3.4**	12.0-14.0	**3.2-3.7**	13.0-16.0	**3.4-4.2**
CS-423E	4.5-6.4	**1.2-1.7**	6.4-9.5	**1.7-2.5**	9.5-12.9	**2.5-3.4**
CS-533E	5.7-9.5	**1.5-2.5**	9.5-13.2	**2.5-3.5**	13.2-17.0	**3.5-4.5**
CP-533E	5.7-9.5	**1.5-2.5**	9.5-13.2	**2.5-3.5**	13.2-17.0	**3.5-4.5**
CS-563E	12.0-14.0	**3.2-3.7**	14.0-17.0	**3.7-4.5**	17.0-20.0	**4.5-5.3**
CP-563E	12.0-14.0	**3.2-3.7**	14.0-17.0	**3.7-4.5**	17.0-20.0	**4.5-5.3**
CS-573E	12.0-15.0	**3.2-4.0**	14.0-18.0	**3.7-4.8**	17.0-21.0	**4.5-5.6**
CP-573E	12.0-15.0	**3.2-4.0**	14.0-18.0	**3.7-4.8**	17.0-21.0	**4.5-5.6**
CS-583E	15.0-17.0	**4.0-4.5**	17.0-19.0	**4.5-5.0**	19.0-23.0	**5.0-6.0**
CS-663E	15.0-17.0	**4.0-4.5**	17.0-19.0	**4.5-5.0**	19.0-23.0	**5.0-6.0**
CP-663E	15.0-17.0	**4.0-4.5**	17.0-19.0	**4.5-5.0**	19.0-23.0	**5.0-6.0**
CS-683E	17.0-19.0	**4.5-5.0**	19.0-21.0	**5.0-5.5**	22.5-24.5	**6.0-6.5**
CS44	5.8-7.8	**1.5-2.1**	7.8-11.9	**2.1-3.1**	11.9-15.7	**3.1-4.2**
CP44	5.8-7.8	**1.5-2.1**	7.8-11.9	**2.1-3.1**	11.9-15.7	**3.1-4.2**
CS54	5.7-9.5	**1.5-2.5**	9.5-13.2	**2.5-3.5**	13.2-17.0	**3.5-4.5**
CS56	7.6-9.5	**2.0-2.5**	9.5-15.1	**2.5-4.0**	15.1-22.7	**4.0-6.0**
CP56	7.6-9.5	**2.0-2.5**	9.5-15.1	**2.5-4.0**	15.1-22.7	**4.0-6.0**
CS64	7.6-9.5	**2.0-2.5**	9.5-15.1	**2.5-4.0**	15.1-26.5	**4.0-7.0**
CP64	7.6-9.5	**2.0-2.5**	9.5-15.1	**2.5-4.0**	15.1-26.5	**4.0-7.0**
CS74	9.5-11.4	**2.5-3.0**	11.4-15.1	**3.0-4.0**	15.1-26.5	**4.0-7.0**
CP74	9.5-11.4	**2.5-3.0**	11.4-15.1	**3.0-4.0**	15.1-26.5	**4.0-7.0**
CS76	11.4-13.3	**3.0-3.5**	13.3-17.0	**3.5-4.5**	17.0-26.5	**4.5-7.0**
CP76	11.4-13.3	**3.0-3.5**	13.3-17.0	**3.5-4.5**	17.0-26.5	**4.5-7.0**
CS76 XT	11.4-13.3	**3.0-3.5**	13.3-17.0	**3.5-4.5**	17.0-26.5	**4.5-7.0**
CS54B	6.3-10.5	**1.7-2.8**	10.5-14.5	**2.8-3.9**	14.5-18.7	**3.9-5.0**
CP54B	6.3-10.5	**1.7-2.8**	10.5-14.5	**2.8-3.9**	14.5-18.7	**3.9-5.0**
CS56B	8.4-10.5	**2.2-2.8**	10.5-16.6	**2.8-4.4**	16.6-25.0	**4.4-6.6**
CP56B	8.4-10.5	**2.2-2.8**	10.5-16.6	**2.8-4.4**	16.6-25.0	**4.4-6.6**
CS64B	6.3-10.5	**1.7-2.8**	10.5-14.5	**2.8-3.9**	14.5-18.7	**3.9-5.0**
CS66B	8.4-10.5	**2.2-2.8**	10.5-16.6	**2.8-4.4**	16.6-25.0	**4.4-6.6**
CS68B	8.4-10.5	**2.2-2.8**	10.5-16.6	**2.8-4.4**	16.6-29.2	**4.4-7.7**
CP68B	8.4-10.5	**2.2-2.8**	10.5-16.6	**2.8-4.4**	16.6-29.2	**4.4-7.7**
CS74B	10.5-12.5	**2.8-3.3**	12.5-16.6	**3.3-4.4**	16.6-29.2	**4.4-7.7**
CP74B	10.5-12.5	**2.8-3.3**	12.5-16.6	**3.3-4.4**	16.6-29.2	**4.4-7.7**
CS76B	12.5-14.9	**3.3-3.9**	14.9-18.7	**3.9-5.0**	18.7-29.2	**5.0-7.7**
CS78B	12.5-14.9	**3.3-3.9**	14.9-18.7	**3.9-5.0**	18.7-29.2	**5.0-7.7**

MPACTION EQUIPMENT

odel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
SPHALT COMPACTORS						
CB-434D	5.7-7.6	**1.5-2.0**	7.6-11.4	**2.0-3.0**	11.4-15.2	**3.0-4.0**
CB-534D	5.7-7.6	**1.5-2.0**	7.6-11.4	**2.0-3.0**	11.4-15.2	**3.0-4.0**
CB-534D XW	5.7-7.6	**1.5-2.0**	7.6-11.4	**2.0-3.0**	11.4-15.2	**3.0-4.0**
CB-564D	8.6	**2.3**	10.4	**2.8**	13.3	**3.5**
CB54	8.5	**2.2**	9.4	**2.5**	11.0	**2.9**
CB64	8.5	**2.2**	9.4	**2.5**	11.0	**2.9**
CB44B	6.8	**1.8**	8.3	**2.2**	10.2	**2.7**
CD44B	6.8	**1.8**	8.3	**2.2**	10.2	**2.7**
CB54B	7.9	**2.1**	9.5	**2.5**	10.9	**2.9**
CD54B	6.8	**1.8**	8.3	**2.2**	10.2	**2.7**
IEUMATIC TIRED COMPACTORS						
PS-150C	8.0-11.0	**2.0-3.0**	11.0-13.0	**3.0-3.5**	13.0-15.0	**3.5-4.0**
PS-200B	8.0-11.0	**2.0-3.0**	11.0-13.0	**3.0-3.5**	13.0-15.0	**3.5-4.0**
PS-300C	13.0-15.0	**3.5-4.0**	15.0-17.0	**4.0-4.5**	17.0-23.0	**4.5-6.0**
PF-300C	13.0-15.0	**3.5-4.0**	15.0-17.0	**4.0-4.5**	17.0-23.0	**4.5-6.0**
PS-360C	7.4-9.8	**1.9-2.6**	9.8-12.4	**2.6-3.3**	12.4-14.5	**3.3-4.6**
CW14	8.0-11.0	**2.1-2.9**	11.0-13.0	**2.9-3.4**	13.0-15.0	**3.4-4.0**
CW34	7.4-9.8	**2.0-2.6**	9.8-12.4	**2.6-3.3**	12.4-14.5	**3.3-3.8**

vning & Operating Costs
⑧ Hourly Fuel Consumption Tables
● Compaction Equipment

Asphalt Compactors
Typical Application Description
(relative to work application)

Low	Asphalt mix, 25-50 mm **(1-2 inch)** lifts. Static finish rolling, all lifts.
Medium	Asphalt mix, 51-100 mm **(2-4 inch)** lifts.
High	Asphalt mix, 101-150 mm **(4-6 inch)** lifts. Prepare granular base lifts.

Vibratory Soil Compactors
Typical Application Description
(relative to work application)

Low	Granular soil not compacted to high density (<95 Proctor). Residential street work with lift thicknesses from 51-100 mm **(2-4 inch)** working the initial compaction. Level ground, minimal slopes and intermittent periods of waiting for base work completion or material delivery. Speeds in the middle of the low range (2-3 km/h [1-2 mph]). Minimal start and stop of the vibe function.
Medium	Granular soil compacted to density (>95 Proctor). Cohesive soils with padded drum and low/normal moisture content, blading <25%. Continuous operation on thicker lifts 101-200 mm **(4-8 inch)** or doing the final passes on stiffer materials or working at the top end of the low speed range. Working on slopes greater than 5% or rapid directional changes combined with start and stop of the vibe function.
High	Cohesive soil with padded drum and high moisture content. Combined high load factors from the medium duty application. Working on thick lifts 201-300 mm **(8-12 inch)**, slopes greater than 15%, or applications requiring significant blade work. An example would be trench work with backfilling.

Load Factor Guide
(average engine load factor based on application description for each range)

Low	Vibration 20-40%
Medium	Vibration 40-60%
High	Vibration 60-100%

Pneumatic Compactors
Typical Application Description
(relative to work application)

Low	Asphalt mix, all lifts. Intermediate or finish rolling, chip seal. Level ground.
Medium	Asphalt mix, all lifts. Intermediate or finish rolling. Granular base breakdown <100 mm **(<4 inch)**. Moderate grade.
High	Granular base or cold in place breakdown roller >100 mm **(4 inch)** lifts. Intermediate or finish rolling. Steep grades.

Load Factor Guide
(average engine load factor based on application description for each range)

Low	Vibration 30%-50%
Medium	Vibration 50%-80%
High	Vibration 80%-100%

MPACTION EQUIPMENT — UTILITY COMPACTORS

odel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
314B, CB14B XW	1.5	**0.40**	1.9	**0.50**	2.2	**0.58**
3-214D	2.0-3.0	**0.5-1.0**	2.5-3.5	**0.5-1.0**	3.0-4.0	**1.0-1.5**
322	4.0	**1.06**	5.5	**1.45**	7.0	**1.85**

3-224D	2.0-4.0	**0.5-1.0**	3.0-4.0	**0.5-1.0**	3.5-4.5	**1.0-1.5**
3-225D	2.0-3.0	**0.5-1.0**	2.5-3.5	**0.5-1.0**	3.0-4.0	**1.0-1.5**
324, CB24 XT	4.0	**1.06**	5.5	**1.45**	7.0	**1.85**
C24	3.0	**0.79**	5.0	**1.32**	7.0	**1.85**
332	4.0	**1.06**	5.5	**1.45**	7.0	**1.85**
3-334E	3.8-5-7	**1.0-1.5**	5.7-7.0	**1.5-1.8**	7.0-10.0	**1.8-2.6**
3-335E	3.5-5.5	**0.9-1.4**	5.5-6.5	**1.4-1.7**	6.5-9.0	**1.7-2.4**
334, CB34 XW	2.0-3.2	**0.53-0.83**	3.2-4.5	**0.83-1.19**	4.5-6.0	**1.19-1.59**
C34	2.0-3.2	**0.53-0.83**	3.2-4.5	**0.83-1.19**	4.5-6.0	**1.19-1.59**

Utility Compactors — CB14, CB22, CB24, CB32, CC24
Typical Application Description
(relative to work application)
Low Asphalt mix, 25-50 mm (**1-2 inch**) lifts. Static finish rolling, all lifts.
Medium Asphalt mix, 25-50 mm (**1-2 inch**) lifts. Normal working conditions with vibe and static.
High Asphalt mix, 25-50 mm (**1-2 inch**) lifts. May include some soil compaction.

Load Factor Guide
(average engine load factor based on application description for each range)
Low Vibration 10-30%
Medium Vibration 30-60%
High Vibration 60-85%

Utility Compactors — CB34, CC34
Typical Application Description
(relative to work application)
Low Asphalt mix, 25-50 mm (**1-2 inch**) lifts. Static finish rolling, all lifts.
Medium Asphalt mix, 51-100 mm (**2-4 inch**) lifts.
High Asphalt mix, 101-150 mm (**4-6 inch**) lifts. Prepare granular base lifts.

Load Factor Guide
(average engine load factor based on application description for each range)
Low Vibration 20-40%
Medium Vibration 40-70%
High Vibration 80-100%

PHALT PAVERS

odel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
P500E (106 kW/**142 hp**)	7.6-9.5	**2.0-2.5**	9.5-11.4	**2.5-3.0**	11.4-15.1	**3.0-4.0**
P555E (106 kW/**142 hp**)	7.6-9.5	**2.0-2.5**	9.5-11.4	**2.5-3.0**	11.4-15.1	**3.0-4.0**
P600D (129 kW/**174 hp**)	7.6-11.4	**2.0-3.0**	11.4-17.0	**3.0-4.5**	17.0-22.7	**4.5-6.0**
P655D (129 kW/**174 hp**)	7.6-11.4	**2.0-3.0**	11.4-17.0	**3.0-4.5**	17.0-24.6	**4.5-6.5**
P1000D (167 kW/**224 hp**)	9.5-15.1	**2.5-4.0**	15.1-18.9	**4.0-5.0**	18.9-24.6	**5.0-6.5**
P1055D (167 kW/**224 hp**)	9.5-15.1	**2.5-4.0**	15.1-18.9	**4.0-5.0**	18.9-26.5	**5.0-7.0**
P1000E (168 kW/**225 hp**)	9.5-15.1	**2.5-4.0**	15.1-18.9	**4.0-5.0**	18.9-24.6	**5.0-6.5**
P1055E (168 kW/**225 hp**)	9.5-15.1	**2.5-4.0**	15.1-18.9	**4.0-5.0**	18.9-26.5	**5.0-7.0**
S600D (129 kW/**174 hp**)	7.6-11.4	**2.0-3.0**	11.4-17.0	**3.0-4.5**	17.0-22.7	**4.5-6.0**
S655D (129 kW/**174 hp**)	7.6-11.4	**2.0-3.0**	11.4-17.0	**3.0-4.5**	17.0-24.6	**4.5-6.5**

3-260D	9.5-15.1	**2.5-4.0**	15.1-18.9	**4.0-5.0**	18.9-24.6	**5.0-6.5**
3-2455D	9.5-15.1	**2.5-4.0**	15.1-18.9	**4.0-5.0**	18.9-26.5	**5.0-7.0**
31000E (168 kW/**225 hp**)	9.5-15.1	**2.5-4.0**	15.1-18.9	**4.0-5.0**	18.9-24.6	**5.0-6.5**
31055E (168 kW/**225 hp**)	9.5-15.1	**2.5-4.0**	15.1-18.9	**4.0-5.0**	18.9-26.5	**5.0-7.0**

E: The above fuel usage rates assume typical idle times for screed warm up and machine clean up.

Typical Application Description
(relative to work application)
Low Narrow width paving, low production.
Medium 3-4 m (**10-12 feet**) width, 50-75 mm (**2-3 inch**) lift.
High Wide width, deep lift paving.

Load Factor Guide
(average engine load factor based on application description for each range)
Low 20%-30%
Medium 30%-40%
High 40%-50%

OLD PLANERS

Model	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
M102	15.6-22.3	**4.1-5.9**	22.3-29.0	**5.9-7.7**	29.0-35.7	**7.7-9.4**
M200	38.7-55.3	**10.2-14.6**	55.3-71.8	**14.6-19.0**	71.8-88.4	**19.0-23.4**
M201	45.5-60.6	**12.0-16.0**	60.6-83.4	**16.0-22.0**	83.4-106.1	**22.0-28.0**
M465	37.0-45.0	**10.0-12.0**	45.0-57.0	**12.0-15.0**	60.0-76.0	**16.0-20.0**
M565B	37.0-53.0	**10.0-14.0**	53.0-68.0	**14.0-18.0**	72.0-87.0	**19.0-23.0**

Typical Application Description
(relative to work application)
Low 50 mm (**2 inches**) or less cutting depth, 80% load cycle.
Medium 100 mm (**4 inches**) cutting depth.
High Steady, full depth.

Load Factor Guide
(average engine load factor based on application description for each range)
Low 35%-50%
Medium 50%-65%
High 65%-80%

)AD RECLAIMERS/SOIL STABILIZERS						
lodel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
M250C	26.5-34.1	**7.0-9.0**	34.1-41.6	**9.0-11.0**	41.6-53.0	**11.0-14.0**
M300	26.5-34.1	**7.0-9.0**	34.1-41.6	**9.0-11.0**	41.6-53.0	**11.0-14.0**
M350B	53.1-68.2	**14.0-18.0**	68.2-83.4	**18.0-22.0**	83.4-94.8	**22.0-25.0**
M500	45.4-56.7	**12.0-15.0**	60.5-68.1	**16.0-18.0**	75.7-87.1	**20.0-23.0**

Typical Application Description
(relative to work application)
Low 150 mm **(6 inches)** soil/100 mm **(4 inches)** asphalt.
Medium 305 mm **(12 inches)** soil/150 mm **(6 inches)** asphalt.
High 457 mm **(18 inches)** soil/305 mm **(12 inches)** asphalt.

Load Factor Guide
(average engine load factor based on application description for each range)
Low 35%-60%
Medium 60%-80%
High 80%-90%

ACK LOADERS						
lodel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
53D	12.2-19.1	**3.2 -5.1**	19.1-24.4	**5.1-6.4**	24.4-29.6	**6.4-7.8**
53D	15.7-22.5	**4.2-5.9**	24.7-29.2	**6.5-7.7**	29.2-36.0	**7.7-9.5**
73D	24.5-28.4	**6.5-7.5**	28.4-37.8	**7.5-10.0**	37.8-45.0	**10.0-11.9**

Typical Application Description
(relative to work application)
Low Site clearing of small vegetation, stripping top soil, carrying to stockpile. Backfilling and grading. Intermittent truck loading from stockpile. Free flowing, low density materials with standard bucket. Large amounts of idling. No impact.
Medium Bank excavation, bank or stockpile loading. Intermittent ripping, basement digging of natural bed clays, sands, silts, gravels. Load and carry. Steady full throttle operation.
High Loading shot rock, cobbles, glacial till, caliche. Continuous work on rock surfaces. Continuous excavating and loading from bank. High density materials in standard bucket. Land clearing and steel mill work. Large amount of ripping in tight, rocky materials. High impact conditions.

Load Factor Guide
(average engine load factor based on application description for each range)
Low 35%-50%
Medium 50%-65%
High 65%-80%

Product Link Information — Product Link measured over hundreds of Track-Type Loaders shows that more than 90% of the machines experience an average fuel consumption equal to or lower than those shown in the Low Application profile.

HEEL LOADERS AND INTEGRATED TOOLCARRIERS

odel	Low		Medium		High	
	liter	U.S. gal	liter	U.S. gal	liter	U.S. gal
1C (Inside Japan only)	0.0-1.5	**0.0-0.4**	1.5-3.4	**0.4-0.9**	3.4-4.9	**0.9-1.3**
2C, 903C (Inside Japan only)	0.0-2.3	**0.0-0.6**	2.3-4.5	**0.6-1.2**	4.5-6.8	**1.2-1.8**
6H2 (LRC)	0.0-4.2	**0.0-1.1**	4.2-8.3	**1.1-2.2**	8.3-12.1	**2.2-3.2**
6H2 (HRC)	0.0-4.2	**0.0-1.1**	4.2-7.9	**1.1-2.1**	7.9-12.1	**2.1-3.2**
7H2 (LRC)	0.0-4.2	**0.0-1.1**	4.2-8.3	**1.1-2.2**	8.3-12.1	**2.2-3.2**
7H2 (HRC)	0.0-4.2	**0.0-1.1**	4.2-7.9	**1.1-2.1**	7.9-12.1	**2.1-3.2**
8H2 (LRC)	0.0-4.2	**0.0-1.1**	4.2-8.3	**1.1-2.2**	8.3-12.1	**2.2-3.2**
8H2 (HRC)	0.0-4.2	**0.0-1.1**	4.2-7.9	**1.1-2.1**	7.9-12.1	**2.1-3.2**
4G2, IT14G2	5.0-6.5	**1.0-2.0**	8.0-10.5	**2.0-2.5**	11.5-13.0	**3.0-3.5**
4K	3.5-5.9	**0.9-1.6**	5.5-8.9	**1.5-2.3**	8.5-11.8	**2.3-3.7**
0K	3.6-6.2	**0.9-1.6**	5.8-9.3	**1.5-2.5**	9.0-12.5	**2.4-4.0**
8K	3.6-6.2	**0.9-1.6**	5.9-9.4	**1.5-2.5**	9.0-12.5	**2.4-4.0**
0H*	8.0-11.5	**2.1-3.0**	11.5-14.8	**3.0-3.9**	14.8-18.6	**3.9-4.9**
0K/962K*	7.8-11.1	**2.1-2.9**	11.1-13.8	**2.9-3.6**	13.8-18.2	**3.6-4.8**
2H, IT62H*	8.9-11.9	**2.4-3.1**	11.9-15.1	**3.1-4.0**	15.1-18.9	**4.0-5.0**
2K*	8.6-11.5	**2.3-3.0**	11.5-14.6	**3.0-3.9**	14.6-18.3	**3.9-4.8**
6H*	9.6-13.6	**2.5-3.6**	13.6-17.0	**3.6-4.5**	17.0-20.8	**4.5-5.5**
6K*	10.3-14.2	**2.7-3.8**	14.2-17.8	**3.8-4.7**	17.8-22.4	**4.7-5.9**
6K XE*	8.5-11.6	**2.3-3.1**	11.6-14.3	**3.1-3.8**	14.3-18.2	**3.8-4.8**
2H*	12.4-17.0	**3.3-4.5**	17.0-21.1	**4.5-5.6**	21.1-26.0	**5.6-6.9**
2K*	11.5-15.7	**3.0-4.2**	15.7-19.7	**4.2-5.2**	19.7-24.5	**5.2-6.5**
0H*	15.4-20.7	**4.1-5.5**	20.7-26.2	**5.5-6.9**	26.2-33.2	**6.9-8.8**
0K*	14.4-19.6	**3.8-5.2**	19.6-24.9	**5.2-6.6**	24.9-32.6	**6.6-8.6**
6H*	19.0-27.3	**5.0-7.2**	27.3-35.8	**7.2-9.5**	35.8-44.3	**9.5-11.7**
8H*	28.0-40.1	**7.4-10.6**	40.1-52.6	**10.6-13.9**	52.6-65.1	**13.9-17.2**
8K*	23.8-34.1	**6.3-9.0**	34.1-44.7	**9.0-11.8**	44.7-55.3	**11.8-14.6**
0H*	42.0-58.3	**11.1-15.4**	58.3-75.0	**15.4-19.8**	75.0-91.6	**19.8-24.2**
2K*	53.0-75.7	**14.0-20.0**	75.7-98.4	**20.0-26.0**	98.4-121.0	**26.0-32.0**
3K*	61.3-87.4	**16.2-23.1**	87.4-113.6	**23.1-30.3**	113.6-140.0	**30.0-37.0**
4F*	87.0-123.0	**23.0-32.5**	123.0-160.0	**32.5-42.4**	160.0-197.0	**42.2-52.0**

Medium and Large Wheel Loader (i.e. 950 through 980) and Large Wheel Loader (i.e. 988 through 994) hourly fuel rates are taken directly from customer chines registered on Product Link worldwide. Data from the top and bottom 5% of these customer machines has been excluded from the tables because it varies ely (15-60% from the extremes shown) and therefore is not considered representative of what the remaining 90% of customers experience. Hourly fuel

0.67

25

sumption for the 90% of machines in the tables also varies depending upon geographical region, load factor variation between units, etc. Cat machines often used in more demanding applications which can account for differences between competitive models used in lighter duty applications. Consult your al Cat dealer for ways to more accurately estimate hourly fuel consumption for specific applications.

E: Medium Wheel Loaders
H Series: Not available in all regions. Contact your local Cat dealer for product availability.
Cat K Series: Tier 4 Interim/Stage IIIB
Only available in North America and Europe. Contact your local Cat dealer for product availability.

Compact Wheel Loaders
Typical Application Description
(relative to work application)

Low	Light industrial or construction site duties. Moving light loads with bucket or pallet forks. Not continuous duty, considerable idle time. Machine could be working on average 2 hours or less per day.
Medium	Intermittent aggregate truck loading from stockpile, hopper charging or load and carry on firm, smooth surfaces for short distances with minimal grades. Free flowing, low density materials. Light utility, industrial and construction applications. Light snowplowing.
High	Continuous truck loading from stockpile and hopper charging. Loading from bank or load and carry on normal surfaces with low to medium rolling resistance and slight adverse grades. Low to medium density materials in properly sized bucket. Assumes normal travel distances associated with high productivity stockpile load-out and batch plant applications.

Load Factor Guide
(percent of available horsepower required for each work application)

Low	0%-25%
Medium	25%-50%
High	50%-75%

Small, Medium and Large Wheel Loaders and Integrated Toolcarriers
Typical Application Description
(relative to work application)

Low	Intermittent aggregate truck loading from stockpile, hopper charging or load and carry on firm, smooth surfaces for short distances with minimal grades. Free flowing, low density materials. Light utility, industrial and construction applications. Light snowplowing. Most logging applications where there is considerable idling.
Medium	Continuous truck loading from stockpile and hopper charging. Loading from bank or load and carry on normal surfaces with low to medium rolling resistance and slight adverse grades. Low to medium density materials in properly sized bucket. Assumes normal travel distances associated with high productivity stockpile load-out and batch plant applications.
High	Loading shot rock (large loaders) from a face. Steady loading from very tight banks. Continuous work on rough or very soft surfaces with high rolling resistance. Load and carry in hard digging material with longer travel distances on poor surfaces with adverse grades. Handling high density materials with counterweighted machine.

Small and Medium Wheel Loader and Integrated Toolcarrier
Load Factor Guide
(average engine load factor based on application description for each range)
Fuel rates can vary for a specific load factor depending on model and application, therefore some overlap is shown in the load factor table.

Low	15%-30%
Medium	25%-35%
High	30%-45%

Large Wheel Loaders
Load Factor Guide

(average engine load factor based on application description for each range)

Low	35%-50%
Medium	50%-65%
High	65%-80%

Diesel engine power to Fuel Consumption table - Naturally aspirated Engines

Table based on fuel consumed at 240 g/kW hour

Power Unit			Fuel Consumption per hour			
hp	**kW**	**kVA**	**lb**	**kg**	**liter**	**US gal**
1	0.75	0.93	0.40	0.18	0.21	0.06
1.07	0.8	1	0.43	0.19	0.23	0.06
1.34	1	1.25	0.54	0.24	0.29	0.08
5	3.73	4.66	2.00	0.90	1.07	0.28
7	5.22	6.52	2.80	1.30	1.49	0.39
hp	**kW**	**kVA**	**lb**	**kg**	**liter**	**US gal**
10	7.46	9.32	4.00	1.80	2.13	0.56
12	9	11	4.80	2.20	2.56	0.68
15	11	14	6.00	2.70	3.20	0.85
18	13	17	7.20	3.25	3.84	1.01
20	15	19	8.00	3.50	4.26	1.13
22	16	21	8.80	4.00	4.69	1.24
25	19	23	10	4.5	5.33	1.41
35	26	33	14	6.4	7.46	1.97
50	37	47	20	9.1	10.66	2.82
hp	**kW**	**kVA**	**lb**	**kg**	**liter**	**US gal**
55	41	51	22	10	11.7	3.09
60	45	56	24	10.9	12.8	3.38
65	48	61	26	11.8	13.9	3.67
75	56	70	30	13.6	16	4.23
80	60	75	32	14.5	17.1	4.52
100	75	93	40	18	21.3	5.63
hp	**kW**	**kVA**	**lb**	**kg**	**liter**	**US gal**
120	89	112	48	22	25.6	6.76
150	112	140	60	27	32	8.45
200	149	186	80	36	42.6	11.25
220	164	205	88	40	46.9	12.39
300	224	280	120	54	63.9	16.88
310	231	289	124	56	66.1	17.46
350	261	326	140	80	64	19.71
hp	**kW**	**kVA**	**lb**	**kg**	**liter**	**US gal**
400	298	373	160	73	85.3	22.53
450	336	419	180	82	95.9	25.33
500	373	466	200	91	106.6	28.16
600	447	559	240	109	128	33.8
750	559	699	300	136	160	42.3
1000	746	932	400	181	213	56.3
hp	**kW**	**kVA**	**lb**	**kg**	**liter**	**US gal**

Approximate guide only, subject to change without notice

BDC for engine manuals and specs

https://barringtondieselclub.co.za/

4.23

Diesel engine power to Fuel Consumption
turbocharged engines

Table based on fuel consumed at 192 g/kW hour

Power Unit			Fuel Consumption per hour			
hp	kW	kVA	lb	kg	liter	US gal
1	0.75	0.93	0.32	0.144	0.17	0.045
1.07	0.8	1	0.344	0.152	0.18	0.048
1.34	1	1.25	0.432	0.192	0.23	0.061
5	3.73	4.66	1.6	0.720	0.85	0.226
7	5.22	6.52	2.24	1.040	1.19	0.315
hp	kW	kVA	lb	kg	liter	US gal
10	7.46	9.32	3.2	1.440	1.70	0.450
12	9	11	3.84	1.760	2.05	0.541
15	11	14	4.8	2.160	2.56	0.676
18	13	17	5.76	2.600	3.07	0.811
20	15	19	6.4	2.800	3.41	0.900
22	16	21	7.04	3.200	3.75	0.991
25	19	23	8	3.600	4.26	1.126
35	26	33	11.2	5.120	5.97	1.577
50	37	47	16	7.280	8.53	2.253
hp	kW	kVA	lb	kg	liter	US gal
55	41	51	17.6	8.000	9.36	2.472
60	45	56	19.2	8.720	10.24	2.705
65	48	61	20.8	9.440	11.12	2.938
75	56	70	24	10.880	12.80	3.384
80	60	75	25.6	11.600	13.68	3.616
100	75	93	32	14.400	17.04	4.504
hp	kW	kVA	lb	kg	liter	US gal
120	89	112	38.4	17.600	20.48	5.408
150	112	140	48	21.600	25.60	6.760
200	149	186	64	28.800	34.08	9.000
220	164	205	70.4	32.000	37.52	9.910
300	224	280	96	43.200	51.12	13.500
310	231	289	99.2	44.800	52.88	13.968
350	261	326	112	64.000	51.20	15.768
hp	kW	kVA	lb	kg	liter	US gal
400	298	373	128	58.400	68.24	18.024
450	336	419	144	65.600	76.72	20.264
500	373	466	160	72.800	85.28	22.530
600	447	559	192	87.200	102.40	27.040
750	559	699	240	108.800	128.00	33.840
1000	746	932	320	144.800	170.40	45.040
hp	kW	kVA	lb	kg	liter	US gal

Approximate guide only, subject to change without notice

Table 1. On-Road Worker Vehicle Fuel Usage During Construction

	Work	Daily Trips		Total			Trip Length (Miles)			Total Length (Miles)			Fuel Consumption (Gallons)	
	Days	Worker	Delivery	Worker Trips	Vendor Trips	Haul Trips	Worker	Delivery	Hauling	Worker	Delivery	Hauling	Gasoline	Diesel
Phase 1	182	140	0	25,440	0	0	12.0	20.0	0	305,280	0	0	10,433	7,719
Phase 2	157	140	0	21,960	0	0	12.0	20.0	0	263,520	0	0	9,006	6,663
Phase 3	181	190	0	34,363	0	0	12.0	20.0	0	412,354	0	0	14,092	10,426
Phase 4	233	240	0	55,954	0	0	12.0	20.0	0	671,451	0	0	22,947	16,977
Phase 5	286	240	0	68,709	0	0	12.0	20.0	0	824,503	0	0	28,177	20,846
Phase 6	181	190	0	34,363	0	0	12.0	20.0	0	412,354	0	0	14,092	10,426
Phase 7	209	125	0	26,143	0	0	12.0	20.0	0	313,714	0	0	10,721	7,932
Phase 8	599	100	0	59,914	0	0	12.0	20.0	0	718,971	0	0	24,571	18,178
Total	**2028**	**1365**	**0**	**326,846**	**0**	**0**	**n/a**	**n/a**	**n/a**	**3,922,149**	**0**	**0**	**134,040**	**99,166**
														233,206

Table 2. On-Road Delivery Vehicle Fuel Usage During Construction

	Work	Daily Trips		Total			Trip Length (Miles)			Total Length (Miles)			Fuel Consumption (Gallons)	
	Days	Worker	Delivery	Worker Trips	Vendor Trips	Haul Trips	Worker	Delivery	Hauling	Worker	Delivery	Hauling	Gasoline	Diesel
Phase 1	182	0	20	0	3,634	0	12.0	20.0	0	0	72,686	0	0	10,174
Phase 2	157	0	30	0	4,706	0	12.0	20.0	0	0	94,114	0	0	13,173
Phase 3	181	0	80	0	14,469	0	12.0	20.0	0	0	289,371	0	0	40,503
Phase 4	233	0	90	0	20,983	0	12.0	20.0	0	0	419,657	0	0	58,739
Phase 5	286	0	90	0	25,766	0	12.0	20.0	0	0	515,314	0	0	72,128
Phase 6	181	0	80	0	14,469	0	12.0	20.0	0	0	289,371	0	0	40,503
Phase 7	209	0	50	0	10,457	0	12.0	20.0	0	0	209,143	0	0	29,274
Phase 8	599	0	50	0	29,957	0	12.0	20.0	0	0	599,143	0	0	83,862
Total	**2028**	**0**	**490**	**0**	**124,440**	**0**	**n/a**	**n/a**	**n/a**	**0**	**2,488,800**	**0**	**0**	**348,356**

Fuel Efficiency	Gas	DSL
Workers	29.26	39.55
Vendor/Haul Trucks	0	7.14

Notes:

Fuel efficiency calculated in ***Table 2: EMFAC2017 Results - Construction.***

Table 3. EMFAC2017 Results - Construction

Vehicle Class	Fuel	VMT (miles per day)	Fuel (1,000 gal per day)	Fuel Efficiency (miles per gallon)	Fuel	VMT (miles per day)	Fuel (1,000 gal per day)	Fuel Efficiency (miles per gallon)
LDA	GAS	153,254,097	4,812.00	31.85	DSL	1,524,143	30.70	49.65
LDT1	GAS	18,036,183	658.91	27.37	DSL	5,793	0.26	22.33
LDT2	GAS	53,548,483	2,061.56	25.97	DSL	433,989	11.86	36.58
			Average (LDA, LDT1, LDT2)	**29.26**				**39.55**
T7 Tractor Construction	DSL	256,508	35.90	7.14				

Construction Worker Fleet Mix

LDA	50%
LDT1	25%
LDT2	25%

Vendor and Delivery/Haul Truck Fleet Mix

HHDT	100%

Source: EMFAC2017 (v1.0.3) Emissions Inventory
Region Type: County
Region: Los Angeles
Calendar Year: 2024
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Trips	Fuel_Consumption
Los Angeles	2024	LDA	Aggregate	Aggregate	Gasoline	4116236.085	153254097	19419687.67	4812.001767
Los Angeles	2024	LDA	Aggregate	Aggregate	Diesel	39426.20875	1524143.418	187277.9574	30.69961746
Los Angeles	2024	LDA	Aggregate	Aggregate	Electricity	108760.0057	4606816.53	541506.4814	0
Los Angeles	2024	LDT1	Aggregate	Aggregate	Gasoline	494837.5912	18036183.16	2293057.295	658.9055258
Los Angeles	2024	LDT1	Aggregate	Aggregate	Diesel	239.6097239	5792.696626	847.7250828	0.259374866
Los Angeles	2024	LDT1	Aggregate	Aggregate	Electricity	5956.425776	258843.1671	29864.61	0
Los Angeles	2024	LDT2	Aggregate	Aggregate	Gasoline	1446244.823	53548483.34	6797962.893	2061.557099
Los Angeles	2024	LDT2	Aggregate	Aggregate	Diesel	10688.55158	433988.6515	52394.50005	11.86470605
Los Angeles	2024	LDT2	Aggregate	Aggregate	Electricity	22868.95176	716376.6957	115104.5872	0
Los Angeles	2024	T7 tractor constr	Aggregate	Aggregate	Diesel	3767.089352	256507.7642	17030.8645	35.90329357
									7611.191384
									7611191.384

Gas	7532.464392	7532464.392	2749349503	2,778,084,855.26
Diesel	42.82369837	42823.69837	15630649.91	
Electricity	0	0	0	

J.5

Project Operational Energy Calculations

Table 1. Summary of Annual Natural Gas Use During Operation

Natural Gas		
Land Use	**Units**	**Buildout**
Stations	kBTU/yr	576,840
MSF Site	kBTU/yr	1,763,960
Total Natural Gas	**kBTU/yr**	**2,340,800**

Notes:

*See **Appendix 4.2.1** : Air Quality and Health Risk Assessment Technical Report for the Inglewood Transit Connector Project, for CalEEMod output sheets.*

J.6

Project Operational Vehicle Fuel Calculations

Table 1. On road Vehicles - Operational

Scenario	Annual VMT	Fuel Consumption (		
		Gasoline	Diesel	Total
2020 (Baseline) Non-Event w/out ITC	998,811,151	39,082,917	6,255,795	45,338,712
2020 (Baseline) Non-Event w/ ITC	985,939,091	38,579,241	6,175,174	44,754,415

Table 2. Fuel Consumption Summary

Fuel	Fuel Efficiency (MPG)	%Fleet
Gasoline	24.3	94.9%
Diesel	9.6	6.0%

Notes:

Percent fleet based on VMT from EMFAC2017 as shown in ***Table 3: EMFAC2017 Emissions Inventory-Operations***

Annual VMT obtained from Project's Traffic Study

Fuel efficiency based on calculations in ***Table 3: EMFAC2017 Emissions Inventory-Operations,*** *from EMFAC2017.*

Table 3. EMFAC2017 Emissions Inventory - Operations

Fuel	VMT (miles/day)	Fuel Consumption (1,000 gal/day)	Fuel Efficiency (miles per gallon)	Fuel Percentage
GAS	264,155,363	10,892	24.3	94.0
DSL	16,891,142	1,763	9.6	6.0

Note: Fuel percentage based on VMT.
Fuel efficiency calculated using fuel consumption and VMT from EMFAC2017.

Buildout

Source: EMFAC2017 (v1.0.3) Emissions Inventory
Region Type: County
Region: Los Angeles
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	VMT	Trips	Fuel_Consumption
Los Angeles	2020	All Other Buses	Aggregate	Aggregate	Diesel	2343.183367	137563.739	19682.74	14.1161854
Los Angeles	2020	LDA	Aggregate	Aggregate	Diesel	31076.31513	1254451.721	146424.42	27.9088928
Los Angeles	2020	LDT1	Aggregate	Aggregate	Diesel	318.883827	7980.175189	1138.7155	0.37287795
Los Angeles	2020	LDT2	Aggregate	Aggregate	Diesel	7213.217576	323321.6928	35805.946	9.82252833
Los Angeles	2020	LHD1	Aggregate	Aggregate	Diesel	56903.01909	2486530.227	715768.4	117.791105
Los Angeles	2020	LHD2	Aggregate	Aggregate	Diesel	22879.84257	965315.4133	287799.64	50.7533507
Los Angeles	2020	MDV	Aggregate	Aggregate	Diesel	16089.08268	669900.0567	79575.136	26.3936319
Los Angeles	2020	MH	Aggregate	Aggregate	Diesel	5530.806279	58524.02015	553.08063	5.70707465
Los Angeles	2020	Motor Coach	Aggregate	Aggregate	Diesel	702.2154761	89665.48353	10252.346	14.4523655
Los Angeles	2020	PTO	Aggregate	Aggregate	Diesel	0	77604.1055	0	16.4216755
Los Angeles	2020	SBUS	Aggregate	Aggregate	Diesel	3809.443819	120609.469	43960.454	16.1571433
Los Angeles	2020	T6 Ag	Aggregate	Aggregate	Diesel	12.13978335	107.0237496	53.415047	0.01274398
Los Angeles	2020	T6 CAIRP heavy	Aggregate	Aggregate	Diesel	324.6927269	64529.30907	4740.5138	5.90474098
Los Angeles	2020	T6 CAIRP small	Aggregate	Aggregate	Diesel	171.3744268	9061.632137	2502.0666	0.87792896
Los Angeles	2020	T6 instate construc	Aggregate	Aggregate	Diesel	2426.278984	164958.2412	10969.113	17.1675901
Los Angeles	2020	T6 instate construc	Aggregate	Aggregate	Diesel	8537.295099	435827.4708	38596.779	44.6971862
Los Angeles	2020	T6 instate heavy	Aggregate	Aggregate	Diesel	10102.25993	1359860.13	116578.68	131.843601
Los Angeles	2020	T6 instate small	Aggregate	Aggregate	Diesel	37540.76445	1865390.823	433215.22	189.898679
Los Angeles	2020	T6 OOS heavy	Aggregate	Aggregate	Diesel	186.4754929	37250.5508	2722.5422	3.40393096
Los Angeles	2020	T6 OOS small	Aggregate	Aggregate	Diesel	98.67271095	5170.267112	1440.6216	0.5018257

Los Angeles	2020	T6 Public	Aggregate	Aggregate	Diesel	4475.529673	69103.13903	13575.773	8.79751183
Los Angeles	2020	T6 utility	Aggregate	Aggregate	Diesel	1007.118484	16810.42349	11581.863	1.83528551
Los Angeles	2020	T7 Ag	Aggregate	Aggregate	Diesel	4.499762918	120.7863657	19.798957	0.02168075
Los Angeles	2020	T7 CAIRP	Aggregate	Aggregate	Diesel	6042.295873	1093836.153	88217.52	164.281583
Los Angeles	2020	T7 CAIRP construct	Aggregate	Aggregate	Diesel	644.2267122	118490.9376	2912.5239	16.8652056
Los Angeles	2020	T7 NNOOS	Aggregate	Aggregate	Diesel	6606.490559	1333460.793	96454.762	193.819756
Los Angeles	2020	T7 NOOS	Aggregate	Aggregate	Diesel	2375.153039	429767.5625	34677.234	66.0619206
Los Angeles	2020	T7 POLA	Aggregate	Aggregate	Diesel	7812.833003	956447.7775	59377.531	173.248902
Los Angeles	2020	T7 Public	Aggregate	Aggregate	Diesel	5388.516036	109151.4293	16345.165	19.3374384
Los Angeles	2020	T7 Single	Aggregate	Aggregate	Diesel	5736.833995	390829.7871	66202.269	63.0358823
Los Angeles	2020	T7 single constructi	Aggregate	Aggregate	Diesel	4167.887734	293954.2221	18842.858	46.261699
Los Angeles	2020	T7 SWCV	Aggregate	Aggregate	Diesel	1728.151607	70608.4147	6739.7913	34.8920516
Los Angeles	2020	T7 tractor	Aggregate	Aggregate	Diesel	11761.82458	1618822.242	149375.17	240.042823
Los Angeles	2020	T7 tractor construc	Aggregate	Aggregate	Diesel	3450.515128	242486.3532	15599.645	38.3016783
Los Angeles	2020	T7 utility	Aggregate	Aggregate	Diesel	400.4086405	8126.106231	4604.6994	1.35640505
Los Angeles	2020	UBUS	Aggregate	Aggregate	Diesel	41.1944	5504.505842	164.7776	0.85678686
Los Angeles	2020	LDA	Aggregate	Aggregate	Electri	57356.66823	2261366.873	287682.11	0
Los Angeles	2020	LDT1	Aggregate	Aggregate	Electri	1699.39713	63017.51025	8323.1593	0
Los Angeles	2020	LDT2	Aggregate	Aggregate	Electri	8126.151697	276685.8029	41262.617	0
Los Angeles	2020	MDV	Aggregate	Aggregate	Electri	2584.09029	90675.00829	13238.702	0
Los Angeles	2020	UBUS	Aggregate	Aggregate	Electri	14	1217.553685	56	0
Los Angeles	2020	LDA	Aggregate	Aggregate	Gasoli	3953775.191	155194409.6	18642464	5389.41223
Los Angeles	2020	LDT1	Aggregate	Aggregate	Gasoli	437139.5609	16649906.4	2009946.7	669.900336
Los Angeles	2020	LDT2	Aggregate	Aggregate	Gasoli	1346078.916	52129905.23	6303494	2298.92445
Los Angeles	2020	LHD1	Aggregate	Aggregate	Gasoli	108459.0814	4003593.023	1615878.7	390.688777
Los Angeles	2020	LHD2	Aggregate	Aggregate	Gasoli	17784.10214	634396.3378	264956.62	71.0476859
Los Angeles	2020	MCY	Aggregate	Aggregate	Gasoli	167287.212	1221839.315	334574.42	34.078752
Los Angeles	2020	MDV	Aggregate	Aggregate	Gasoli	921418.9646	33053258.24	4259404.3	1782.50644
Los Angeles	2020	MH	Aggregate	Aggregate	Gasoli	19816.73507	197547.6114	1982.4662	39.6611152
Los Angeles	2020	OBUS	Aggregate	Aggregate	Gasoli	4049.799558	176714.7778	81028.39	36.2499118
Los Angeles	2020	SBUS	Aggregate	Aggregate	Gasoli	1186.765779	49913.78493	4747.0631	5.54611145
Los Angeles	2020	T6TS	Aggregate	Aggregate	Gasoli	14534.12164	804968.7922	290798.71	164.240852
Los Angeles	2020	T7IS	Aggregate	Aggregate	Gasoli	62.22338142	5724.924108	1244.9654	1.47414264
Los Angeles	2020	UBUS	Aggregate	Aggregate	Gasoli	455.5999368	33185.08396	1822.3997	7.99772055
Los Angeles	2020	T7 SWCV	Aggregate	Aggregate	Natura	2261.419472	92031.42275	8819.5359	42.4687877
Los Angeles	2020	UBUS	Aggregate	Aggregate	Natura	4123.445337	436938.8565	16493.781	110.591074

	VMT Sum	Fuel Sum	Fuel Sum/Year
Diesel	16891142.18	1763.221667	**643,575,909**
Gas	264155363.1	10891.72852	**3,975,480,911**
			4,619,056,820

Table 1. On road Vehicles - Operational

Scenario	Annual VMT	Fuel Consumption (		
		Gasoline	Diesel	Total
2027 (Future) Non-Event w/out ITC	1,245,731,160	39,370,659	7,700,718	47,071,377
2027 (Future) Non-Event w/ ITC	1,229,255,081	38,849,942	7,598,868	46,448,809
2027 (Future) Event w/out ITC	1,346,432,106	42,553,258	8,323,219	50,876,477
2027 (Future) Event w/ ITC	1,310,204,482	41,408,304	8,099,272	49,507,575

Table 2. Fuel Consumption Summary

Fuel	Fuel Efficiency (MPG)	%Fleet
Gasoline	29.3	92.7%
Diesel	11.8	7.3%

Notes:

Percent fleet based on VMT from EMFAC2017 as shown in ***Table 3: EMFAC2017 Emissions Inventory-Operations***

Annual VMT obtained from Project's Traffic Study

Fuel efficiency based on calculations in ***Table 3: EMFAC2017 Emissions Inventory-Operations,*** *from EMFAC2017.*

Table 3. EMFAC2017 Emissions Inventory - Operations

Fuel	VMT (miles/day)	Fuel Consumption (1,000 gal/day)	Fuel Efficiency (miles per gallon)	Fuel Percentage
GAS	264,748,609	9,026	29.3	92.7
DSL	20,873,654	1,768	11.8	7.3

Note: Fuel percentage based on VMT.
Fuel efficiency calculated using fuel consumption and VMT from EMFAC2017.

Buildout

Source: EMFAC2017 (v1.0.3) Emissions Inventory
Region Type: County
Region: Los Angeles
Calendar Year: 2027
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	VMT	Trips	Fuel_Consumption
Los Angeles	2027	All Other Buses	Aggregate	Aggregate	Diesel	2928.244068	167576.9571	24597.25	14.7973053
Los Angeles	2027	LDA	Aggregate	Aggregate	Diesel	43926.40393	1647186.855	209900.89	30.7690067
Los Angeles	2027	LDT1	Aggregate	Aggregate	Diesel	157.5329145	4132.542246	600.29929	0.17228995
Los Angeles	2027	LDT2	Aggregate	Aggregate	Diesel	12880.90116	489461.2734	62495.517	12.4038234
Los Angeles	2027	LHD1	Aggregate	Aggregate	Diesel	88693.71017	3446903.904	1115655.3	146.479145
Los Angeles	2027	LHD2	Aggregate	Aggregate	Diesel	36069.05587	1345321.508	453703.35	63.5652524
Los Angeles	2027	MDV	Aggregate	Aggregate	Diesel	28018.63463	1002209.516	135639.73	32.7902275
Los Angeles	2027	MH	Aggregate	Aggregate	Diesel	7558.730539	74485.73928	755.87305	6.59375641
Los Angeles	2027	Motor Coach	Aggregate	Aggregate	Diesel	815.0350008	101259.3468	11899.511	14.1446557
Los Angeles	2027	PTO	Aggregate	Aggregate	Diesel	0	83177.05696	0	15.3791889
Los Angeles	2027	SBUS	Aggregate	Aggregate	Diesel	3961.780955	125049.8475	45718.403	15.4690675
Los Angeles	2027	T6 Ag	Aggregate	Aggregate	Diesel	12.80803027	76.04848299	56.355333	0.0089321
Los Angeles	2027	T6 CAIRP heavy	Aggregate	Aggregate	Diesel	399.8150613	73169.63868	5837.2999	5.51250084
Los Angeles	2027	T6 CAIRP small	Aggregate	Aggregate	Diesel	217.4341274	10383.60688	3174.5383	0.85893491
Los Angeles	2027	T6 instate construc	Aggregate	Aggregate	Diesel	2805.963386	172269.173	12685.651	15.5267658
Los Angeles	2027	T6 instate construc	Aggregate	Aggregate	Diesel	8893.994696	457807.4054	40209.404	40.0232623
Los Angeles	2027	T6 instate heavy	Aggregate	Aggregate	Diesel	13558.56657	1659628.925	156463.98	134.955194
Los Angeles	2027	T6 instate small	Aggregate	Aggregate	Diesel	45851.4524	2228055.361	529119.4	193.175001
Los Angeles	2027	T6 OOS heavy	Aggregate	Aggregate	Diesel	232.005763	42522.76631	3387.2841	3.20217566
Los Angeles	2027	T6 OOS small	Aggregate	Aggregate	Diesel	124.2755728	5894.702082	1814.4234	0.48839981

Los Angeles	2027	T6 Public	Aggregate	Aggregate	Diesel	4742.273034	74835.9516	14384.895	8.3364888
Los Angeles	2027	T6 utility	Aggregate	Aggregate	Diesel	1075.386059	17847.1615	12366.94	1.65920808
Los Angeles	2027	T7 Ag	Aggregate	Aggregate	Diesel	6.793627775	32.27187042	29.891962	0.0066579
Los Angeles	2027	T7 CAIRP	Aggregate	Aggregate	Diesel	6501.532728	1233922.367	94922.378	155.613679
Los Angeles	2027	T7 CAIRP construct	Aggregate	Aggregate	Diesel	674.9933869	123742.4435	3051.6189	14.970158
Los Angeles	2027	T7 NNOOS	Aggregate	Aggregate	Diesel	8125.03718	1504133.084	118625.54	179.711216
Los Angeles	2027	T7 NOOS	Aggregate	Aggregate	Diesel	2595.754953	484835.4985	37898.022	62.8678512
Los Angeles	2027	T7 POLA	Aggregate	Aggregate	Diesel	9060.174019	1393177.777	68857.323	209.183853
Los Angeles	2027	T7 Public	Aggregate	Aggregate	Diesel	5783.385005	117156.5609	17542.934	18.4789506
Los Angeles	2027	T7 Single	Aggregate	Aggregate	Diesel	6210.69905	418896.2846	71670.606	57.7928074
Los Angeles	2027	T7 single constructi	Aggregate	Aggregate	Diesel	4366.645518	306982.2422	19741.435	40.992324
Los Angeles	2027	T7 SWCV	Aggregate	Aggregate	Diesel	851.7693875	34800.76198	3321.9006	17.0867189
Los Angeles	2027	T7 tractor	Aggregate	Aggregate	Diesel	14740.21047	1764105.562	187200.67	219.038874
Los Angeles	2027	T7 tractor construc	Aggregate	Aggregate	Diesel	3710.08679	253233.3229	16773.158	34.1148848
Los Angeles	2027	T7 utility	Aggregate	Aggregate	Diesel	425.7725794	8628.501907	4896.3847	1.29252889
Los Angeles	2027	UBUS	Aggregate	Aggregate	Diesel	6.0834	752.2395132	24.3336	0.13285609
Los Angeles	2027	LDA	Aggregate	Aggregate	Electri	156692.9782	6494528.454	775045.32	0
Los Angeles	2027	LDT1	Aggregate	Aggregate	Electri	10028.68742	424838.4054	49944.046	0
Los Angeles	2027	LDT2	Aggregate	Aggregate	Electri	36594.60321	1072242.053	182269.91	0
Los Angeles	2027	MDV	Aggregate	Aggregate	Electri	24125.49043	722432.2277	121042.14	0
Los Angeles	2027	UBUS	Aggregate	Aggregate	Electri	14	1217.553685	56	0
Los Angeles	2027	LDA	Aggregate	Aggregate	Gasoli	4223903.069	151386059.1	19906567	4387.6562
Los Angeles	2027	LDT1	Aggregate	Aggregate	Gasoli	534686.017	18729354.47	2479690.7	635.573682
Los Angeles	2027	LDT2	Aggregate	Aggregate	Gasoli	1527540.238	54451687.08	7175585.7	1902.24203
Los Angeles	2027	LHD1	Aggregate	Aggregate	Gasoli	107370.4487	3768343.983	1599659.7	336.619342
Los Angeles	2027	LHD2	Aggregate	Aggregate	Gasoli	18797.7819	636178.05	280058.94	65.3402817
Los Angeles	2027	MCY	Aggregate	Aggregate	Gasoli	212627.4399	1390471.504	425254.88	39.2117013
Los Angeles	2027	MDV	Aggregate	Aggregate	Gasoli	992199.3086	33081966.49	4616781	1426.4688
Los Angeles	2027	MH	Aggregate	Aggregate	Gasoli	19738.69056	198271.6713	1974.6586	35.6149274
Los Angeles	2027	OBUS	Aggregate	Aggregate	Gasoli	4000.848101	153044.7019	80048.969	28.2938613
Los Angeles	2027	SBUS	Aggregate	Aggregate	Gasoli	1906.968068	73318.54378	7627.8723	7.55522219
Los Angeles	2027	T6TS	Aggregate	Aggregate	Gasoli	15466.59149	838476.4302	309455.56	152.980505
Los Angeles	2027	T7IS	Aggregate	Aggregate	Gasoli	51.9437895	6864.60704	1039.2913	1.48478922
Los Angeles	2027	UBUS	Aggregate	Aggregate	Gasoli	477.7813025	34572.05517	1911.1252	7.10374471
Los Angeles	2027	T7 SWCV	Aggregate	Aggregate	Natura	3441.521412	140215.5625	13421.934	57.6325098
Los Angeles	2027	UBUS	Aggregate	Aggregate	Natura	4333.221624	460233.9391	17332.886	117.099046

	VMT Sum	Fuel Sum	Fuel Sum/Year
Diesel	20873654.2	1767.593943	**645,171,789**
Gas	264748608.7	9026.14509	**3,294,542,958**
			3,939,714,747

Table 1. On road Vehicles - Operational

Scenario	Annual VMT	Fuel Consumption (		
		Gasoline	Diesel	Total
2045 (Future) Non-Event w/out ITC	1,369,204,193	35,403,386	8,376,945	43,780,331
2045 (Future) Non-Event w/ ITC	1,351,035,367	34,933,597	8,265,786	43,199,383
2045 (Future) Event w/out ITC	1,469,905,139	38,007,201	8,993,045	47,000,246
2045 (Future) Event w/ ITC	1,426,761,804	36,891,648	8,729,089	45,620,737

Table 2. Fuel Consumption Summary

Fuel	Fuel Efficiency (MPG)	%Fleet
Gasoline	35.3	91.2%
Diesel	14.4	8.8%

Notes:

Percent fleet based on VMT from EMFAC2017 as shown in ***Table 3: EMFAC2017 Emissions Inventory-Operations***

Annual VMT obtained from Project's Traffic Study

Fuel efficiency based on calculations in ***Table 3: EMFAC2017 Emissions Inventory-Operations,*** *from EMFAC2017.*

Table 3. EMFAC2017 Emissions Inventory - Operations

Fuel	VMT (miles/day)	Fuel Consumption (1,000 gal/day)	Fuel Efficiency (miles per gallon)	Fuel Percentage
GAS	270,481,007	7,669	35.3	91.2
DSL	26,050,423	1,811	14.4	8.8

Note: Fuel percentage based on VMT.
Fuel efficiency calculated using fuel consumption and VMT from EMFAC2017.

Buildout

Source: EMFAC2017 (v1.0.3) Emissions Inventory
Region Type: County
Region: Los Angeles
Calendar Year: 2045
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	Population	VMT	Trips	Fuel_Consumption
Los Angeles	2045	All Other Buses	Aggregate	Aggregate	Diesel	4160.446695	217622.7163	34947.752	17.1112367
Los Angeles	2045	LDA	Aggregate	Aggregate	Diesel	58620.54216	1871522.657	276646.85	30.4461662
Los Angeles	2045	LDT1	Aggregate	Aggregate	Diesel	99.01748743	2948.130769	449.65056	0.09306953
Los Angeles	2045	LDT2	Aggregate	Aggregate	Diesel	18888.93099	592209.7663	88558.648	12.8189248
Los Angeles	2045	LHD1	Aggregate	Aggregate	Diesel	143747.3637	4419777.453	1808161	166.071204
Los Angeles	2045	LHD2	Aggregate	Aggregate	Diesel	58478.77848	1731691.395	735589.47	72.3826014
Los Angeles	2045	MDV	Aggregate	Aggregate	Diesel	42211.98811	1247535.498	196887.72	34.8459151
Los Angeles	2045	MH	Aggregate	Aggregate	Diesel	11462.39772	91376.82184	1146.2398	7.12686895
Los Angeles	2045	Motor Coach	Aggregate	Aggregate	Diesel	985.931923	123212.6205	14394.606	14.6194559
Los Angeles	2045	PTO	Aggregate	Aggregate	Diesel	0	96559.54668	0	14.5151294
Los Angeles	2045	SBUS	Aggregate	Aggregate	Diesel	4551.398088	144413.8002	52522.503	13.8175228
Los Angeles	2045	T6 Ag	Aggregate	Aggregate	Diesel	5.488105617	4.523188915	24.147665	0.00083426
Los Angeles	2045	T6 CAIRP heavy	Aggregate	Aggregate	Diesel	545.8363808	89064.85254	7969.2112	5.83351066
Los Angeles	2045	T6 CAIRP small	Aggregate	Aggregate	Diesel	301.5507018	12674.06432	4402.6402	0.93088368
Los Angeles	2045	T6 instate construc	Aggregate	Aggregate	Diesel	2307.374395	154488.997	10431.55	12.1478781
Los Angeles	2045	T6 instate construc	Aggregate	Aggregate	Diesel	8410.459373	415909.0141	38023.36	30.8719481
Los Angeles	2045	T6 instate heavy	Aggregate	Aggregate	Diesel	21369.45158	2132030.517	246600.51	147.752507
Los Angeles	2045	T6 instate small	Aggregate	Aggregate	Diesel	62538.96006	2799610.732	721690.93	208.014273
Los Angeles	2045	T6 OOS heavy	Aggregate	Aggregate	Diesel	315.4744926	51828.14664	4605.9276	3.39348449
Los Angeles	2045	T6 OOS small	Aggregate	Aggregate	Diesel	173.5312419	7187.232024	2533.5561	0.52904548

Los Angeles	2045	T6 Public	Aggregate	Aggregate	Diesel	5594.801474	86866.578	16970.898	7.93605794
Los Angeles	2045	T6 utility	Aggregate	Aggregate	Diesel	1208.402646	20134.26458	13896.63	1.61731244
Los Angeles	2045	T7 CAIRP	Aggregate	Aggregate	Diesel	7211.501205	1500409.665	105287.92	148.602327
Los Angeles	2045	T7 CAIRP construct	Aggregate	Aggregate	Diesel	635.4569327	110970.7885	2872.8761	11.2500083
Los Angeles	2045	T7 NNOOS	Aggregate	Aggregate	Diesel	11226.27016	1828916.252	163903.54	191.055854
Los Angeles	2045	T7 NOOS	Aggregate	Aggregate	Diesel	2865.834749	589562.0706	41841.187	59.8004655
Los Angeles	2045	T7 POLA	Aggregate	Aggregate	Diesel	12028.61716	2507404.939	91417.49	274.452297
Los Angeles	2045	T7 Public	Aggregate	Aggregate	Diesel	6562.655557	132956.4921	19906.722	15.8905217
Los Angeles	2045	T7 Single	Aggregate	Aggregate	Diesel	6089.311924	486293.1777	70269.815	53.9743069
Los Angeles	2045	T7 single constructi	Aggregate	Aggregate	Diesel	3609.153513	275298.1155	16316.843	29.9352598
Los Angeles	2045	T7 SWCV	Aggregate	Aggregate	Diesel	98.00302906	4002.963247	382.21181	1.83646651
Los Angeles	2045	T7 tractor	Aggregate	Aggregate	Diesel	16613.44806	2069084.855	210990.79	196.113434
Los Angeles	2045	T7 tractor construc	Aggregate	Aggregate	Diesel	3059.37014	227096.7078	13831.293	24.2397542
Los Angeles	2045	T7 utility	Aggregate	Aggregate	Diesel	481.2637037	9757.956806	5534.5326	1.10323878
Los Angeles	2045	UBUS	Aggregate	Aggregate	Diesel	0	0	0	0
Los Angeles	2045	LDA	Aggregate	Aggregate	Electri	310027.7052	10073972.23	1469713.1	0
Los Angeles	2045	LDT1	Aggregate	Aggregate	Electri	26549.24356	825890.5826	124055.08	0
Los Angeles	2045	LDT2	Aggregate	Aggregate	Electri	84454.45584	1869730.253	398476.59	0
Los Angeles	2045	MDV	Aggregate	Aggregate	Electri	62154.10603	1367053.685	292578.12	0
Los Angeles	2045	LDA	Aggregate	Aggregate	Gasoli	4751020.081	150405108.3	22333884	3673.21739
Los Angeles	2045	LDT1	Aggregate	Aggregate	Gasoli	688085.8398	20759661.39	3158780.6	588.690603
Los Angeles	2045	LDT2	Aggregate	Aggregate	Gasoli	1843259.518	57318729.87	8590032.6	1606.41169
Los Angeles	2045	LHD1	Aggregate	Aggregate	Gasoli	121193.9758	3810879.099	1805609.7	296.87249
Los Angeles	2045	LHD2	Aggregate	Aggregate	Gasoli	22324.8176	672125.3068	332606.52	60.1296775
Los Angeles	2045	MCY	Aggregate	Aggregate	Gasoli	295582.3083	1523709.895	591164.62	43.7533169
Los Angeles	2045	MDV	Aggregate	Aggregate	Gasoli	1182417.529	34574043.71	5466805.9	1182.57773
Los Angeles	2045	MH	Aggregate	Aggregate	Gasoli	23767.40038	209666.0345	2377.6907	32.8323914
Los Angeles	2045	OBUS	Aggregate	Aggregate	Gasoli	4282.060074	145896.4647	85675.458	23.218056
Los Angeles	2045	SBUS	Aggregate	Aggregate	Gasoli	3270.931289	111935.2572	13083.725	10.0198137
Los Angeles	2045	T6TS	Aggregate	Aggregate	Gasoli	18881.31426	902721.2629	377777.34	142.413548
Los Angeles	2045	T7IS	Aggregate	Aggregate	Gasoli	73.41229088	8391.910547	1468.8331	1.53007778
Los Angeles	2045	UBUS	Aggregate	Aggregate	Gasoli	527.5566572	38138.55255	2110.2266	6.97617863
Los Angeles	2045	T7 SWCV	Aggregate	Aggregate	Natura	5137.471294	209465.5453	20036.138	71.458606
Los Angeles	2045	UBUS	Aggregate	Aggregate	Natura	4802.397532	509885.2599	19209.59	129.642675

	VMT Sum	Fuel Sum	Fuel Sum/Year
Diesel	26050423.31	1811.129763	**661,062,364**
Gas	270481007	7668.642963	**2,799,054,682**
			3,460,117,045

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Vons Store Replacement Energy Calculations

Table 1. Summary of Energy Use During Construction		
Fuel Type	**Quantity**	
Diesel		
Off-Road Construction Equipment	19,164	Gallons
On-Road Motor Vehicles	6,903	Gallons
Total	26,067	Gallons
Gasoline		
Off-Road Construction Equipment	0	Gallons
On-Road Motor Vehicles	4,670	Gallons
Total	4,670	Gallons

Table 2. Summary of Annual Energy Use During Operation		
Source	**Units**	**Buildout**
Electricity		
Supermarket	kWh/yr	1,637,250
Parking	kWh/yr	28,700
Water Conveyance	kWh/yr	76,441
Total Electricty	*kWh/yr*	*1,742,391*
Natural Gas		
Supermarket	kBTU/yr	953,520
Total Natural Gas	*kBTU/yr*	*953,520*

Table 3. Water by Land Use				
		Project		
Land Use	**Units**	**Indoor/Outdoor Use**	**Indoor Use**	**Outdoor Use**
Buildout	Mgal	5.71965 / 0.176896	5.71965	0.176896

Water and Wastewater Electricity Intensity (kWh/gallon)

Supply Water	0.009727
Treat Water	0.000111
Distribute Water	0.001272
Wastewater Treatment	0.001911

Source: CalEEMod User's Guide, Appendix D

Indoor Water Factor	0.013021	kWh/gallon (supply, treat, distribute, wastewater treatment)
Outdoor Water Factor	0.01111	kWh/gallon (supply, treat, and distribute)

Table 4. Off-Road Equipment Fuel Usage During Construction							
Phase Name	**Off-road Equipment Type**	**Amount**	**Hours per Day**	**Horsepower**	**Load Factor**	**Number of Days**	**Diesel Fuel Usage (Gallons per Project)**
Building Construction	Cranes	1	8	231	0.29	169	4,529
Building Construction	Forklifts	2	7	89	0.2	169	2,106
Building Construction	Generator Sets	1	8	84	0.74	169	4,202
Building Construction	Tractors/Loaders/Backhoes	1	6	97	0.37	169	1,820
Building Construction	Welders	3	8	46	0.45	169	4,198
Paving	Cement and Mortar Mixers	1	8	9	0.56	22	44
Paving	Pavers	1	8	130	0.42	22	480
Paving	Paving Equipment	1	8	132	0.36	22	418
Paving	Rollers	2	8	80	0.38	22	535
Paving	Tractors/Loaders/Backhoes	1	8	97	0.37	22	316
Architectural Coating	Air Compressors	1	6	78	0.48	46	517
Total							**19,164**

Notes:

Equipment assumptions from CalEEMod.

Fuel usage estimate of 0.05 gallons per horsepower-hour is from the SCAQMD CEQA Air Quality Handbook, Table A9-3 E.

Table 5. On-Road Vehicle Fuel Usage During Construction														
		Daily Trips		Total			Trip Length (Miles)			Total Length (Miles)			Fuel Consumption (Gallons)	
Sub Area 1	Days	Worker	Vendor	Worker Trips	Vendor Trips	Haul Trips	Worker	Vendor	Hauling	Worker	Vendor	Hauling	Gasoline	Diesel
Building Construction	169	49	21	8,281	3,549	0	14.7	6.9	20	121,731	24,488	0	4,263	6,603
Architectural Coating	46	10	0	460	0	0	14.7	6.9	20	6,762	0	0	237	174
Paving	22	15	0	330	0	0	14.7	6.9	20	4,851	0	0	170	125
Total	**237**	**74**	**21**	**9,071**	**3,549**	**0**	**n/a**	**n/a**	**n/a**	**133,344**	**24,488**	**0**	**4,670**	**6,903**

Fuel Efficiency	Gas	DSL
Workers	28.55	38.77
Vendor/Haul Trucks	0	7.07

Notes:

Fuel efficiency calculated in ***Table 6: EMFAC2017 Results - Construction.***

Table 6. EMFAC2017 Results - Construction								
Vehicle Class	Fuel	VMT (miles per day)	Fuel (1,000 gal per day)	Fuel Efficiency (miles per gallon)	Fuel	VMT (miles per day)	Fuel (1,000 gal per day)	Fuel Efficiency (miles per gallon)
LDA	GAS	153,812,692	4,943.66	31.11	DSL	1,468,847	30.23	48.59
LDT1	GAS	17,733,494	661.89	26.79	DSL	6,251	0.28	22.12
LDT2	GAS	53,205,335	2,111.84	25.19	DSL	410,652	11.48	35.77
			Average (LDA, LDT1, LDT2)	**28.55**				**38.77**
T7 Tractor Construction	DSL	253,443	35.84	7.07				

Construction Worker Fleet Mix

LDA	50%
LDT1	25%
LDT2	25%

Vendor and Delivery/Haul Truck Fleet Mix

HHDT	100%

Source: EMFAC2017 (v1.0.3) Emissions Inventory
Region Type: County
Region: Los Angeles
Calendar Year: 2023
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Trips	Fuel_Consumption
LOS ANGELES	2023	LDA	Aggregate	Aggregate	Gasoline	4079718.343	153812691.8	19249547.07	4943.660073
LOS ANGELES	2023	LDA	Aggregate	Aggregate	Diesel	37620.08952	1468847.201	178324.7106	30.23068474
LOS ANGELES	2023	LDA	Aggregate	Aggregate	Electricity	93246.42895	3877173.285	464969.6401	0
LOS ANGELES	2023	LDT1	Aggregate	Aggregate	Gasoline	480759.8328	17733493.57	2225422.937	661.8900744
LOS ANGELES	2023	LDT1	Aggregate	Aggregate	Diesel	257.6434833	6250.546569	911.0447198	0.282612153
LOS ANGELES	2023	LDT1	Aggregate	Aggregate	Electricity	4694.098206	199559.1454	23532.52193	0
LOS ANGELES	2023	LDT2	Aggregate	Aggregate	Gasoline	1420577.957	53205335.05	6674512.78	2111.835151
LOS ANGELES	2023	LDT2	Aggregate	Aggregate	Diesel	9886.840992	410652.3194	48611.0055	11.47875608
LOS ANGELES	2023	T7 tractor constr	Aggregate	Aggregate	Diesel	3720.516306	253442.7111	16820.30957	35.83999783
									7795.217349
									7795217.349
		Gas	7717.385298	7717385.298	2816845634	35,378,625.00		2,845,254,332.38	
		Diesel	77.83205081	77832.05081	28408698.54	10,548,851.00			
						45,927,476.00			