Table 3.4 Calibration and Scenario data File Names, Descriptions, and Primary Source by Class of Information, California ITHIM

Class	File Name	Description	Primary Source
Burden of Disease	CalBurdenDisease2010.csv	Age-sex-cause-region specific deaths, yll, yld, dalys	Institute for Health Metrics and Evaluation
Burden of Disease	APC_Disease_Rates.csv	Age-sex-cause specific annual change in mortality rates	Canudas et al, 2017
Burden of Disease	DiseaseRiskAdjuster.csv	Age-sex-cause specific adjustment factor to population subgroup (equity analysis)	user-defined (e.g. race/ethnicity, income, etc.)
Car CO2	CO2g_mi.csv	Region-specific grams of CO2 per car mile traveled	ARB-EMFAC14
Costs	COI2010USD.csv	Cause-specific per capita costs of illness	MEPS, NCI, medical specialty societies
Exposure	ATmean_min_week_age_sex_baseline.csv	Age-sex-region-specific minutes of walking and cycling/p/y by mode	CHTS2012
Exposure	bike_walk_cv.csv	Region-specific coefficient of variation for mean active travel (mi/p/y)	CHIS2009, NM processed
Exposure	METminWalk_Bike.csv	Age-sex-mode (walk/bike) specific MET weights for active travel	James Woodcock, 2011
Exposure	nonTravelMETS.csv	Age-sex-quintile specific min/p/w of non-travel METs	CHIS 2009, SAS program Item4_CHIS2009_PA_Quintiles_SD8-30-13Confidential.sas
Exposure	Distances_mi_year_baseline.csv	Region-specific travel miles/p/y by mode for 2010 baseline year	CHTS2012, MPO TDMs
Exposure	Distances_mi_yr_scs.csv	Region-specific travel miles/p/y by mode reported in MPO EIRs	MPO TDMs, AT MPO EIR relative increase from baseline
Exposure	Distances_mi_yr_strip.csv	Region-specific travel miles/p/y by mode substituting car trips	CHTS2012
Exposure	Distances_mi_yr_ussg.csv	Region-specific travel miles/p/y by mode with AT median 150 min/p/w	Baseline Motorized modes + 75 med min bike/walk converted to mean and then 3 and 12 mph speed
Exposure	Baseline_distance_by_facility_type.csv	Region-specific percentage of VMT by mode and facility type	MPO and California Statewide travel demand models

Exposure	PM25CARB2012.csv	Region-specific change in PM2.5 with change in car VMT	EMFAC, Air shed models
Exposure	user_scenario.csv	Region-specific travel miles/p/y by mode and percent VMT by mode and facility type	User-defined
Exposure	WalkBikeTransitRatios.csv	Region and mode (bike/walk)-specific ratio of transit travel time (min/p/y)	CHTS 2012
Exposure	Bus_occupancy.csv	Region-specific bus occupancy	MPOs, CHTS2012
Parameters	ParameterDefaults.csv	Default constants (e.g., walk, speed, bike speed, VSL, etc.)	Constants for travel, health outcomes, costs
Population	age_sex_region2010.csv	Age-sex-region-population proportions for baseline year 2010	USCensus_2010_SF1_QTP1
Population	age_sex_region_county2010-2050.csv	Age-sex-county population projections in 5 calendar year bands from 2015-2050	USCensus_2010_SF1_QTP1, CaDoF_2015-2050
Risk	PA_RR.csv	Disease-specific RR per METhr-wk	JamesWoodcock2010
Risk	PM25_RR.csv	Disease-specific RR per mg/m3 of PM2.5	Krewski et al 2009, via Bart Ostro, 2010
Risk	rti_baseline.csv	Region-severity-facility specific RTIs by striking and victim mode for baseline year	SWITRS, 2006-2010

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Table 3.5 Variable Names, Definitions, and Coding Levels of Calibration and Scenario Data Files, California ITHIM

File Name	Variable Name	Definition	Code Levels
CalBurdenDisease2010.csv	Region	California and 5 MPO regions	California; SF Bay Area; San Joaquin Valley; Sacramento Area; Southern California; San Diego County
	Year	Year of death	
	Cause	Cause of death	Ischemic Heart Disease, Stroke, Hypertensive Heart Disease, Diabetes, Breast Cancer, Colon Cancer, Dementia, Depression, Inflammatory Heart Disease, Lung Cancer, Respiratory diseases, Acute resp infections, Road Traffic Injuries
	Sex	Gender	1=M, 2=F
	Age	Age group identifier	0=0-4, 5=5-14, 15=15-29, 30=30-49, 50=50-59, 60=60-69, 70=70-70, 80=80+
	pop	Population	DOF
	deaths	Number of deaths	Global Burden of Disease for US adjusted to mortality ratio of region to US for age-sex deaths >10
	yll	Years of life lost	Global Burden of Disease for US adjusted to mortality ratio of region to US for age-sex deaths >10
	yld	Years living with disability	Global Burden of Disease for US adjusted to mortality ratio of region to US for age-sex deaths >10
	daly	Disability-adjusted life years	Global Burden of Disease for US adjusted to mortality ratio of region to US for age-sex deaths >10
APC_Disease_Rates.csv	Cause	Specific cause of disease	Ischemic Heart Disease, Stroke, Hypertensive Heart Disease, Inflammatory Heart Disease, Lung Cancer, Respiratory diseases, Acute resp infections
	Sex	Gender	1=M, 2=F
	Age	Age group identifier	0=0-4, 5=5-14, 15=15-29, 30=30-49, 50=50-59, 60=60-69, 70=70-70, 80=80+
	APC	Annual percent change in mortality rate	0 to 100

Table 3.5 Variable Names, Definitions, and Coding Levels of Calibration and Scenario Data Files, California ITHIM (cont'd)

File Name	Variable Name	Definition	Code Levels
DiseaseRiskAdjuster.csv	Region	Name of region (based on MPOs)	California; SF Bay Area; San Joaquin Valley; Sacramento Area; Southern California; San Diego County
	Cause	Cause of death	Ischemic Heart Disease, Stroke, Hypertensive Heart Disease, Diabetes, Breast Cancer, Colon Cancer, Dementia, Depression, Inflammatory Heart Disease, Lung Cancer, Respiratory diseases, Acute resp infections, Road Traffic Injuries
	Sex	Gender	1=M, 2=F
	Age	Age group identifier	0=0-4, 5=5-14, 15=15-29, 30=30-49, 50=50-59, 60=60-69, 70=70-70, 80=80+
	Rradj	Relative risk adjustment for co-variate	1 for deaths < 10
CO2_gmi.csv	Region	California and 5 MPO regions	California; SF Bay Area; San Joaquin Valley; Sacramento Area; Southern California; San Diego County
	Year	Year of Projection	2010 and 5 year intervals to 2050
	CO2g_mi	Grams of CO2 emitted per mile of car travel	Averaged over gas, diesel, and electric cars and light trucks
COI2010USD.csv	Cause	Specific cause of disease	Ischemic Heart Disease, Stroke, Hypertensive Heart Disease, Diabetes, Breast Cancer, Colon Cancer, Dementia, Depression, Inflammatory Heart Disease, Lung Cancer, Respiratory diseases, Acute resp infections, Road Traffic Injuries
	Specific cause	Cause mentioned in cost literature	Heart Disease, Diabetes, Breast Cancer, Colon Cancer, Dementia, Depression, Lung Cancer, Asthma and COPDs, Road Traffic Injuries
	USCost2010	National cost in constant 2010 USD	
	PerCapita2010USD	Cost per capita in constant 2010 USD	

Table 3.5 Variable Names, Definitions, and Coding Levels of Calibration ND Scenario Data Files, California ITHIM (cont'd)

File Name	Variable Name	Definition	Code Levels
ATmean_min_week_age_sex_baseline.csv	Region	California and 5 MPO regions	California; SF Bay Area; San Joaquin Valley; Sacramento Area; Southern California; San Diego County
	Sex	Gender of traveler	1=M, 2=F, Both=Both
	Age	Age group identifier	0=0-4, 5=5-14, 15=15-29, 30=30-49, 50=50-59, 60=60-69, 70=70-70, 80=80+, Total
	Mode	Active mode of travel	Walk, Bike
	Baseline	Mean minutes/person/week of active travel at baseline	CHTS2012 mean distance/p/d converted to times using 3 mph average for walking and 12 mph for cycling
	Source	Source(s) of data	CHTS, 2012, except Sacramento Area, NHTS, 2009
ParameterDefaults	VariableName	Variable name of parameter	Walkspeed, Bikespeed, SiN, PAChronicBeta, PAAllCauseBeta, Nqtiles, VSL
	Definition	Definition of parameter	
	Default	Default value of parameter	3,12,0.5,0.5,0.25,5, 7400000
WalkBikeTransitRatios.csv	Region	California and 5 MPO regions	California; SF Bay Area; San Joaquin Valley; Sacramento Area; Southern California; San Diego County
	BikeTRatio	Ratio of Bike to Transit minutes	
	WalkTRatio	Ratio of Walk to Transit minutes	
	TransitMin	Baseline Transit Minutes per week	

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Table 3.5 Variable Names, Definitions, and Coding Levels of Calibration and Scenario Data Files, California ITHIM (cont'd)

File Name	Variable Name	Definition	Code Levels
bike_walk_cv.csv	Region	California and 5 MPO regions	California; SF Bay Area; San Joaquin Valley; Sacramento Area; Southern California; San Diego County
	CV	Coefficient of variation of active travel time	CHIS, 2009 via SAS program Item4_CHIS2009_PA_Quintiles_SD8-30-13Confidential.sas
METminWalk_Bike.csv	Sex	Gender of traveler	1=M, 2=F, Both=Both
	Age	Age group identifier	0=0-4, 5=5-14, 15=15-29, 30=30-49, 50=50-59, 60=60-69, 70=70-70, 80=80+, Total
	METminWalk	Age-sex adjusted METS for walking	Average velocity of 3 mph, Woodcock age-sex ratios from Europe, and Ainsworth regression relationships with 2.5 minimum
	METminBike	Age-sex adjusted METS for cycling	Constant of 6 METS (no age-sex variation)
nonTravel_METS.csv	Region	California and 5 MPO regions	California; SF Bay Area; San Joaquin Valley; Sacramento Area; Southern California; San Diego County
	Sex	Gender of traveler	1=M, 2=F
	Age	Age group identifier	0=0-4, 5=5-14, 15=15-29, 30=30-49, 50=50-59, 60=60-69, 70=70-70, 80=80+
	q1	1st quintile of non-travel METS	0 - 75
	q2	2nd quintile of non-travel METS	0 - 75
	q3	3rd quintile of non-travel METS	0 - 75
	q4	4th quintile of non-travel METS	0 - 75
	q5	5th quintile of non-travel METS	0 - 75

Table 3.5 Variable Names, Definitions, and Coding Levels of Calibration ND Scenario Data Files, California ITHIM (cont'd)

File Name	Variable Name	Definition	Code Levels
Distances_mi_year_baseline.csv	Region	California and 5 MPO regions	California; SF Bay Area; San Joaquin Valley; Sacramento Area; Southern California; San Diego County
	Mode	Travel mode	Walk, Bike, CarDriver, CarPassenger, Bus, Rail, Motorcycle, Truck
	Baseline	Per capita mean miles/p/yr	TBD edit checks specific to mode
Distances_mi_yr_scs.csv	Region	California and 5 MPO regions	California; SF Bay Area; San Joaquin Valley; Sacramento Area; Southern California; San Diego County
	Mode	Travel mode	Walk, Bike, CarDriver, CarPassenger, Bus, Rail, Motorcycle, Truck
	Scenario	Per capita mean miles/p/yr	TBD edit checks specific to mode
Distances_mi_yr_strip.csv	Region	California and 5 MPO regions	California; SF Bay Area; San Joaquin Valley; Sacramento Area; Southern California; San Diego County
	Mode	Travel mode	Walk, Bike, CarDriver, CarPassenger, Bus, Rail, Motorcycle, Truck
	Scenario	Per capita mean miles/p/yr	TBD edit checks specific to mode
Distances_mi_yr_ussg.csv	Region	California and 5 MPO regions	California; SF Bay Area; San Joaquin Valley; Sacramento Area; Southern California; San Diego County
	Mode	Travel mode	Walk, Bike, CarDriver, CarPassenger, Bus, Rail, Motorcycle, Truck
	Scenario	Per capita mean miles/p/yr	TBD edit checks specific to mode

Table 3.5 Variable Names, Definitions, and Coding Levels of Calibration and Scenario Data Files, California ITHIM (cont'd)

File Name	Variable Name	Definition	Code Levels
PA_RR.csv	Cause	Specific cause of disease	Ischemic Heart Disease, Diabetes, Breast Cancer, Colon Cancer, Dementia, Depression, Stroke, Hypertensive Heart Disease, All causes
	Sex	Gender	1=M, 2=F
	Age	Age group identifier	0=0-4, 5=5-14, 15=15-29, 30=30-49, 50=50-59, 60=60-69, 70=70-70, 80=80+
	RR	Change in RR per MET	0.89 - 0.99999
PM25_RR.csv	Cause	Specific cause of disease	Ischemic Heart Disease, Stroke, Hypertensive Heart Disease, Inflammatory Heart Disease, Lung Cancer, Respiratory diseases, Acute resp infections
	coefficient	ln(RR per ug/m3 PM2.5)	CVD, 0.008618; Lung Cancer, 0.013102826; respiratory dis, 0.008618; Acute resp infections, 0.009758033
PM25CARB2010_2050.csv	Region	California and 5 MPO regions	California; SF Bay Area; San Joaquin Valley; Sacramento Area; Southern California; San Diego County
	pm25	Population weighted annual average PM2.5 levels, background, 2010	5-25
	slope	change in PM2.5/change car VMT	
	intercept	intercept of PM2.5/car VMT relationship	

Table 3.5 Variable Names, Definitions, and Coding Levels of Calibration ND Scenario Data Files, California ITHIM (cont'd)

File Name	Variable Name	Definition	Code Levels
pop_age_sex_region2010	Region	California and 5 MPO regions	California; SF Bay Area; San Joaquin Valley; Sacramento Area; Southern California; San Diego County
	Sex	Gender	1=M, 2=F, Both
	Age	Age group identifier	0=0-4, 5=5-14, 15=15-29, 30=30-49, 50=50-59, 60=60-69, 70=70-70, 80=80+, Total
	Population	Population count in 2010	
	Percent	Percent of age-sex population	0 to 1
pop_age_sex_region_county2010-2050	Geography	Region name or county within region	See code list
	Region	Name of region (based on MPOs)	California; SF Bay Area; San Joaquin Valley; Sacramento Area; Southern California; San Diego County
	Sex	Gender	1=M, 2=F
	Age	Age group identifier	0=0-4, 5=5-14, 15=15-29, 30=30-49, 50=50-59, 60=60-69, 70=70-70, 80=80+
	Year	Year of estimate	2010, and 5-year annual average for 2015-2019, 2020-2024, 2025-2029,2030-2034,2035-2039,2040-2044,2045-2049,2050-2054
	Population	Population estimate	5-year annual average population based on Cal Dept. of Finance Projections

Table 3.5 Variable Names, Definitions, and Coding Levels of Calibration and Scenario Data Files, California ITHIM (cont'd)

File Name	Variable Name	Definition	Code Levels
Baseline_distance_by_facility_type.csv	Region	California and 5 MPO regions	California; SF Bay Area; San Joaquin Valley; Sacramento Area; Southern California; San Diego County
	Mode	Travel mode	Walk, Bike, Ca, Bus, Motorcycle, Truck
	local_pct_b	Percent of travel on local roads	0 to 1
	art_pct_b	Percent of travel on arterials	0 to 1
	hwyl_pct_b	Percent of travel on highways	0 to 1
rti_baseline.csv	Region	California and 5 MPO regions	California; SF Bay Area; San Joaquin Valley; Sacramento Area; Southern California; San Diego County
	Severity	Severity of injury	Fatal, Serious
	Roadway	Roadway type	Local, Arterial, Highway
	VictimMode	Mode of victim	walk, bike, car, bus, rail, motorcycle, truck
	walk	Number of injuries, walk striking mode	>=0, upper limit TBD
	bike	Number of injuries, bike striking mode	>=0, upper limit TBD
	bus	Number of injuries, bus striking mode	>=0, upper limit TBD
	car	Number of injuries, car striking mode	>=0, upper limit TBD
	truck	Number of injuries, truck striking mode	>=0, upper limit TBD
	motorcycle	Number of injuries, motorcycle striking mode	>=0, upper limit TBD

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Table 3.5 Variable Names, Definitions, and Coding Levels of Calibration ND Scenario Data Files, California ITHIM (cont'd)

File Name	Variable Name	Definition	Code Levels
	NOV	No other vehicle involved in collision	>=0, upper limit TBD
bus_occupancy.csv	Region	California and 5 MPO regions	California; SF Bay Area; San Joaquin Valley; Sacramento Area; Southern California; San Diego County
	Occupancy	Occupancy (PMT/VMT)	>=0

Table 3.6 Default Values for Key parameters of California ITHIM

Variable Name	Definition	Default Values
Walkspeed	Average walking speed in miles/hour	3
Bikespeed	Average bicycling speed in miles/hour	12
SiN	Safety in Numbers coefficient	0.5
PAChronicBeta	Slope of the dose-response function between physical activity and chronic diseases, exclusive of all causes	0.5
PAAllCauseBeta	Slope of the dose-response function between physical activity and all-causes mortality	0.25
NQtiles	Number of quantiles of modeled physical activity distribution	5
VSL	Value of a Statistical Life in dollars, 2010	7400000
LCD_VMT	Percent reduction in VMT/emissions in Low Carbon Driving Scenario from 2010 baseline by 2045	33.5

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