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

Category	File Name	Description	Primary Source
Burden of Disease	BurdenDisease2010.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	Grams of CO2 per car mile traveled	US EPA-MOVES2014b
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	NHTS, 2017
Exposure	bike_walk_cv.csv	Region-specific coefficient of variation for mean active travel (mi/p/y)	NHANES, 2016-2017
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	NHANES 2016-2017, R CVnonTravelMETS2020-01-13.R
Exposure	default_narratives_2019_07_10.csv	Region-specific travel miles/p/y by mode for 2015 baseline and built-in scenarios: Short trips, US Surgeon General (USSG).	NHTS 2017. For USSG, baseline motorized modes + 75 med min bike/walk converted to mean and then 3 and 12 mph speed; For Short Trips and USSG, increase in active travel is offset by reduction in car miles maintaining baseline occupancy .
Exposure	Baseline_distance_by_facility_type.csv	Percentage of VMT by mode and facility type	California average of large MPO and California Statewide travel demand models

Category	File Name	Description	Primary Source
Exposure	PM252010_2050.csv	Change in airborne PM2.5 concentration with car emissions as a function of change in car VMT, 2015 to 2050 in 5-year intervals	MOVES2014b, US EPA methodology for mortality per ton of emissions
Exposure	WalkBikeTransitRatios.csv	Mode (bike/walk)-specific ratio of transit travel time (min/p/y)	NHTS, 2017
Exposure	Bus_occupancy.csv	Region-specific bus occupancy	US DOT, 2016
Parameters	ParameterDefaults.csv	Default constants (e.g., walk, speed, bike speed, VSL, etc.)	Constants for travel, health outcomes, costs
Population	age_sex_regionUSA.csv	Age-sex-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, US Census NP2014 projections
Risk	PA_RR.csv	Disease-specific RR per METhr-wk	JamesWoodcock2010
Risk	PM25_RR.csv	Disease-specific RR per $\mu g/m^3$ of PM2.5	Krewski et al 2009 value for cardio-pulmonary disease, Woodcock 2009 for lung cancer, acute respiratory illness in children
Risk	rti_baseline.csv	Severity-facility specific RTIs by striking and victim mode for baseline year	FARS, 2016; CRSS, 2016

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

File Name	Variable Name	Definition	Code Levels
BurdenDisease.csv	Region		United States
	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, ITHIM USA (cont'd)

File Name	Variable Name	Definition	Code Levels
DiseaseRiskAdjuster.csv	Region	United States	United States
	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		United States
	Year	Year of Projection	2015 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 and Scenario Data Files, ITHIM USA (cont'd)

File Name	Variable Name	Definition	Code Levels
ATmean_min_week_age_sex_baseline.csv	Region	United States	United States
	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, 9800000
WalkBikeTransitRatios.csv	Region	United States	United States
	BikeTRatio	Ratio of Bike to Transit minutes	
	WalkTRatio	Ratio of Walk to Transit minutes	
	TransitMin	Baseline Transit Minutes per week	

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

File Name	Variable Name	Definition	Code Levels
bike_walk_cv.csv	Region	United States	United States
	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	United States	United States
	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, ITHIM USA (cont'd)

File Name	Variable Name	Definition	Code Levels
default_narratives_2019_07_10.csv	Region	United States	United States
	Item_Name	Description of item	Distances (miles/person/year)
	Scenario_ID	2015 Baseline and built-in scenario names	Baseline2015, Replacing Short Car Trips with Active Travel, U. S. Surgeon General Recommendation
	Mode	Travel mode	Walk, Bike, CarDriver, CarPassenger, Bus, Rail, Motorcycle, Truck
	Baseline	Per capita mean miles/p/yr	TBD edit checks specific to mode
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 μg/m3 PM2.5)	CVD, 0.01293; Lung Cancer, 0.013102826; respiratory disease, 0.01293; Acute resp infections, 0.009758033

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

File Name	Variable Name	Definition	Code Levels
PM252010_2050.csv	Region	United States	United States
	pm25	Population weighted annual average PM2.5 levels, background, 2010	5-25
	slope	change in PM2.5/change car VMT	
	DPM_TPD	PM2.5 Emissions in tons per day	
	NOX_TPD	NO_x Emissions in tons per day	
	SO2_TPD	SO_2 Emissions in tons per day	
age_sex_regionUSA.csv	Region	United States	United States
	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

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

File Name	Variable Name	Definition	Code Levels
age_sex_region_county2010-2050	Geography	United States	United States
	Region	Name of region (based on MPOs)	United States
	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
Baseline_distance_by_facility_type.csv	Region	United States	United States
	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

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

File Name	Variable Name	Definition	Code Levels
rti_baseline.csv	Region	United States	United States
	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	Non-negative or 0
	bike	Number of injuries, bike striking mode	Non-negative or 0
	bus	Number of injuries, bus striking mode	Non-negative or 0
	car	Number of injuries, car striking mode	Non-negative or 0
	truck	Number of injuries, truck striking mode	Non-negative or 0
	motorcycle	Number of injuries, motorcycle striking mode	Non-negative or 0
	NOV	No other vehicle involved in collision	Non-negative or 0
bus_occupancy.csv	Region	United States	United States
	Occupancy	Occupancy (PMT/VMT)	Non-negative or 0