Caltrans Training Module 7c

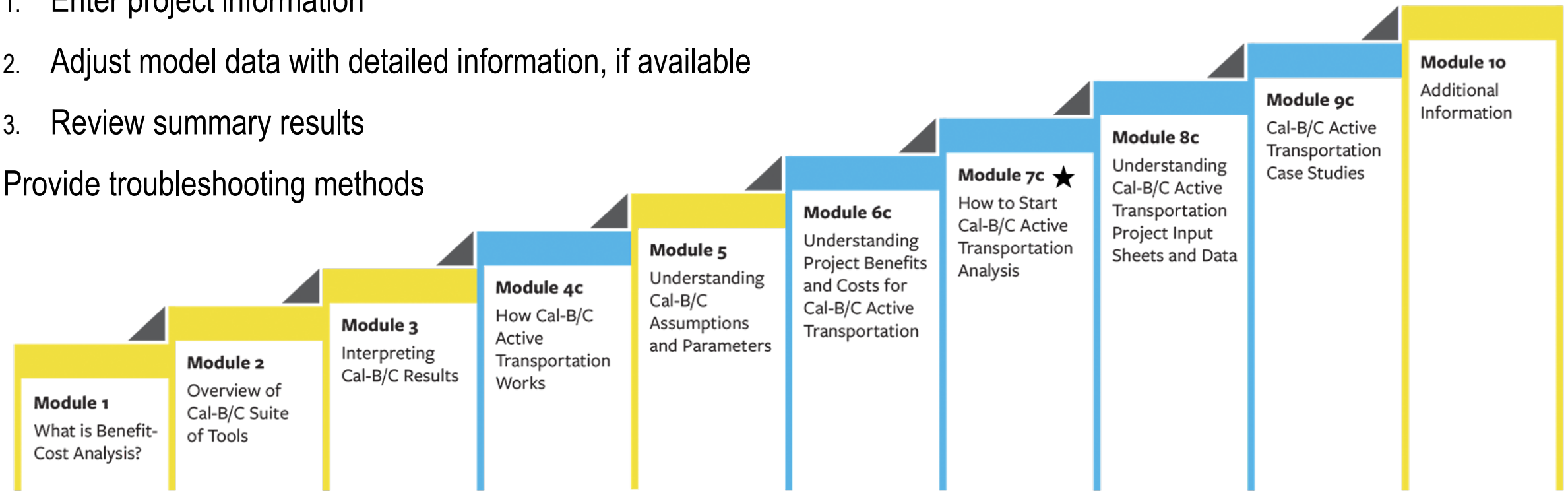
How to Start a Cal-B/C Active Transportation Analysis

01

About This Module

This module will…

- Present a Quick-Start guide to Cal-B/C tools
- Walk through a three-step process to start an analysis in a Cal-B/C tool
  1. Enter project information
  2. Adjust model data with detailed information, if available
  3. Review summary results
- Provide troubleshooting methods



★ *This module is covered in this presentation*

Previous Modules…

- Module 1 provided a basic introduction on benefit-cost analysis (BCA) and a general overview of how to conduct a BCA
- Module 2 described the Cal-B/C suite of tools, discussed the types of projects that can be evaluated, and provided guidance on which tools to use for various project types
- Module 3 presented the Cal-B/C results page, detailed what each output measure means, and explained how they are calculated
- Module 4c presented an overview of how Cal-B/C AT works including a review of all worksheets and inputs
  - **It is strongly recommended to review Module 4c before starting Module 7c**
- Module 5 highlighted the information in the Parameters worksheet and discussed key assumptions used by Cal-B/C
- Module 6c provided detailed information on how Cal-B/C AT calculates benefits

02

Step 1, Enter Project Information

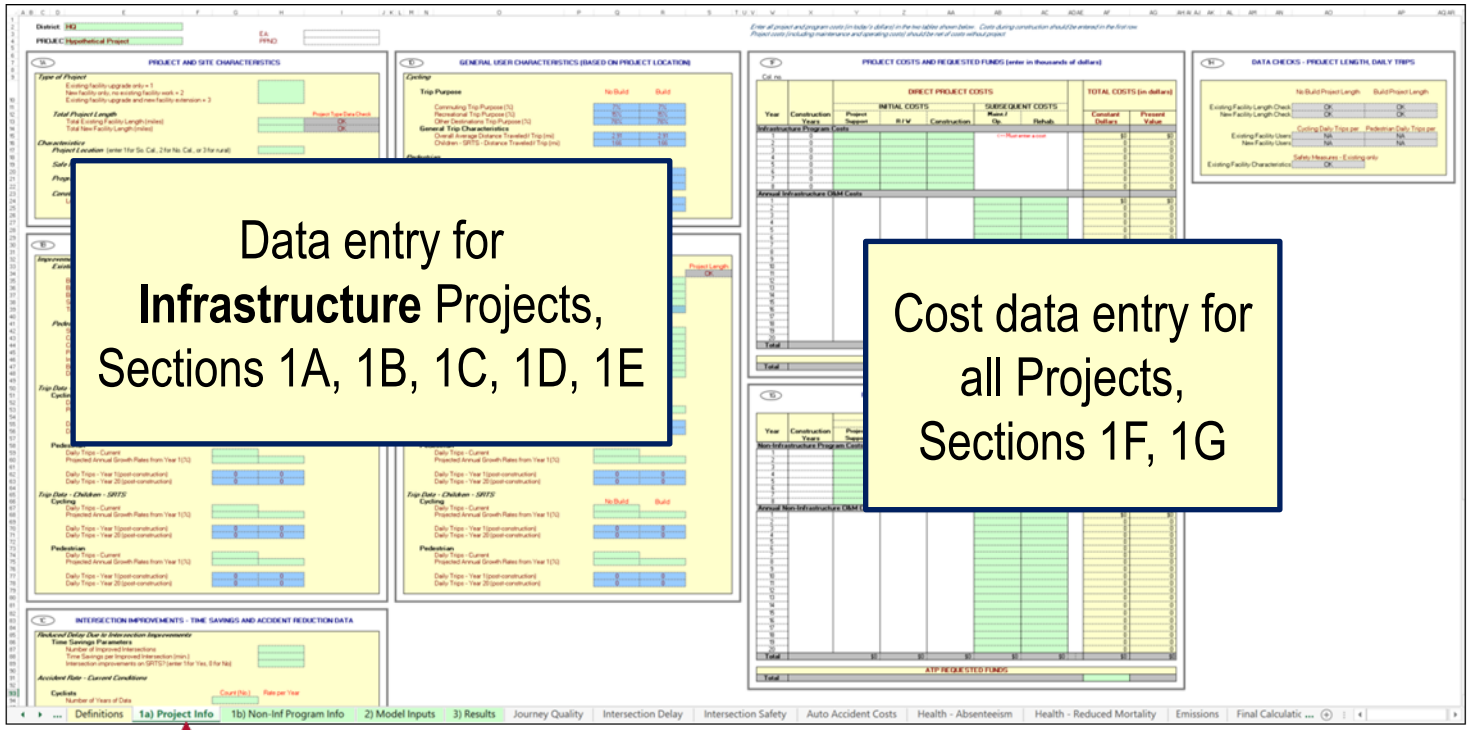
Preview of Project Information Required by Project Type

Project Type	Section 1A Project and Site Characteristics	Section 1B Existing Segment Improvements and Trip Volume	Section 1C Intersection Improvements	Section 1D General User Characteristics (Default Values)	Section 1E New Facility Improvements and Trip Volume
Upgrade Existing Bike Facility	X	X		X	
New Bike Route Facility	X			X	X
Pedestrian Improvements	X	X			X
Intersection Improvement	X		X		
Safety Improvement to Existing Facility	X		X		
Non-Infrastructure Program	X				

Preview of Project Information Required by Project Type

Project Type	Section 1F Project Costs	Section 1G Program Costs	Section 1I Non-Infrastructure Program Characteristics
Upgrade Existing Bike Facility	X		
New Bike Route Facility	X		
Pedestrian Improvements	X		
Intersection Improvement	X		
Safety Improvement to Existing Facility	X		
Non-Infrastructure Program		X	X

Overview of Project Information Worksheet



- Two Primary Data Entry Areas:
  - Infrastructure Project Data, Project Costs

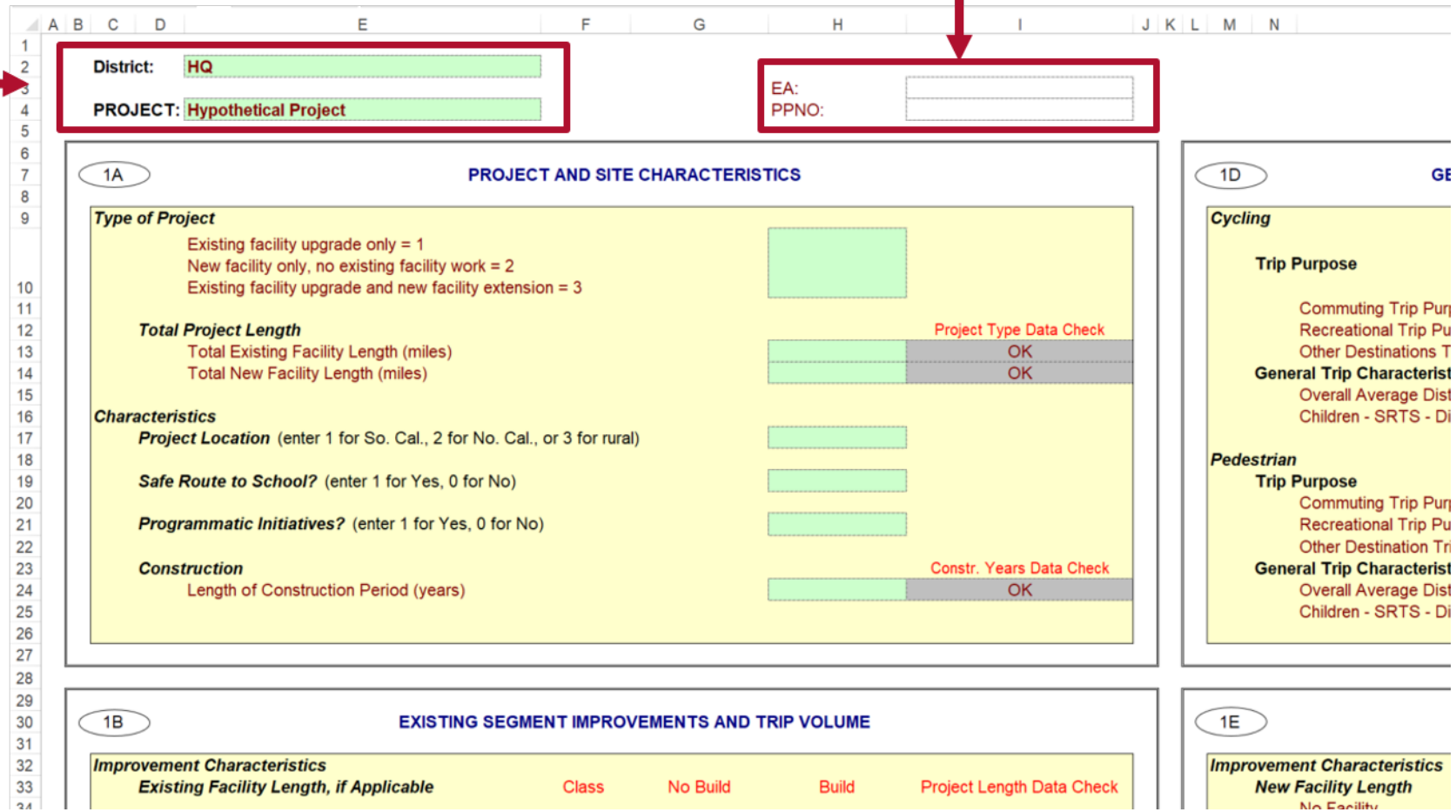
Project Information – Data Requirements

- Project Data – Project description, type of project/program, location, project length, length of construction
- Infrastructure Details – Existing and proposed facility features and length, intersection improvements
- Trip Data – Cycling and Pedestrian volumes for Adults and Children
- Safety Data – How many accidents have occurred and what countermeasures will be implemented
- Project Costs – Capital and on-going operating expenses for the project

Project Information Worksheet (1a)

EA or PPNO only makes sense for Caltrans internal budgeting and programming

Pro tip: Include Post Mile, Highway, or State Route Name in Project Name



- Optional, input unique project identifiers including: Caltrans District, Project Name (w/ route number and postmiles), Expenditure Authorization (EA) number, Planning and Programming Number (PPNO)

1A) Project and Site Characteristics

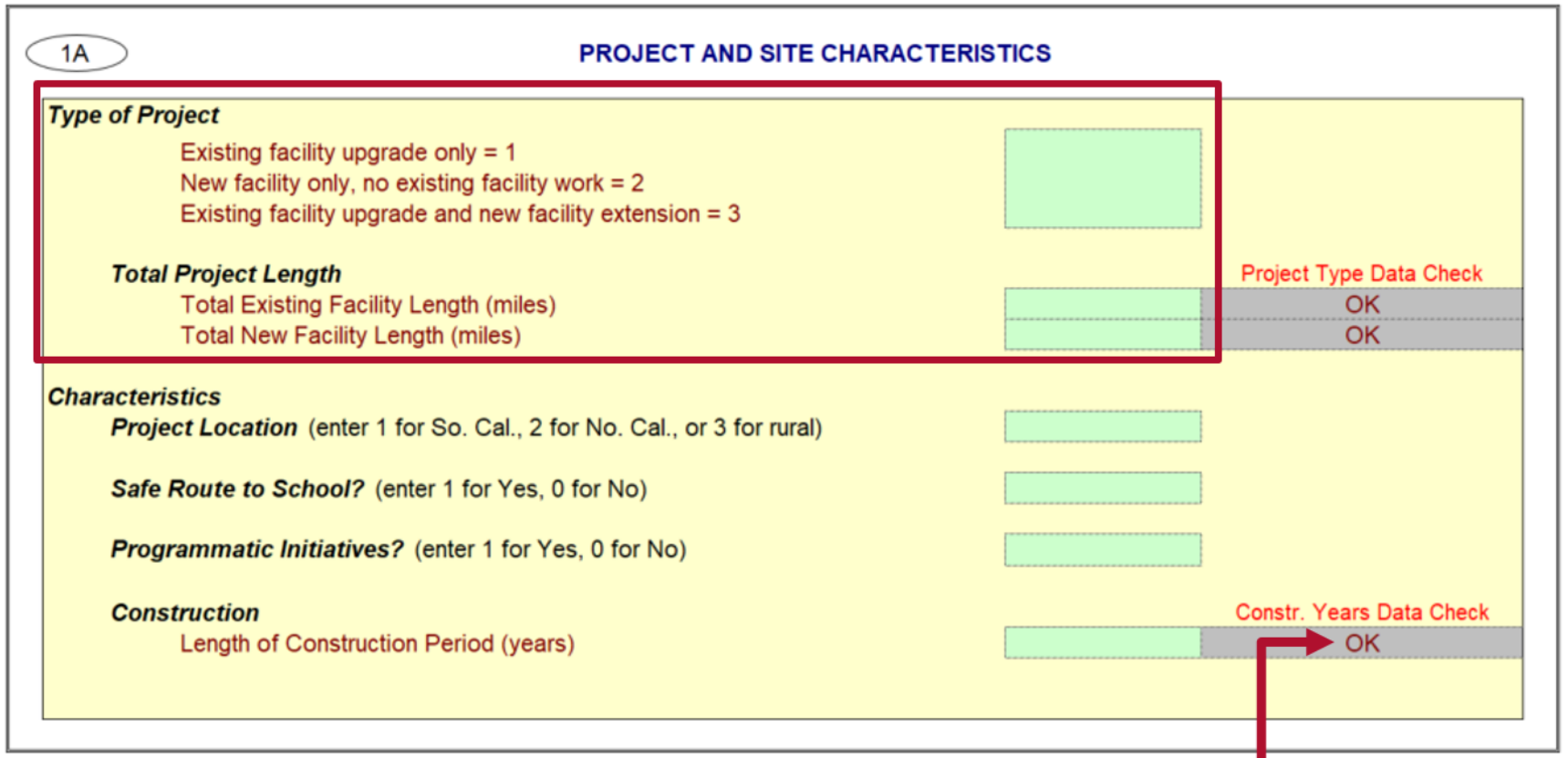
Required for all projects

Type of Project

- Existing facility upgrade, new facility, or both
  - Used to determine which benefits are calculated and how
  - Project Information in Cal-B/C AT is generally separated for existing and new facilities

Total Project Length (miles)

- **Existing facility length**
- **New facility length**



Data checks confirm that data entry is internally consistent

1A) Project and Site Characteristics

Characteristics

Project Location

- Used to estimate emission benefits b
  choosing parameters according to th
  region

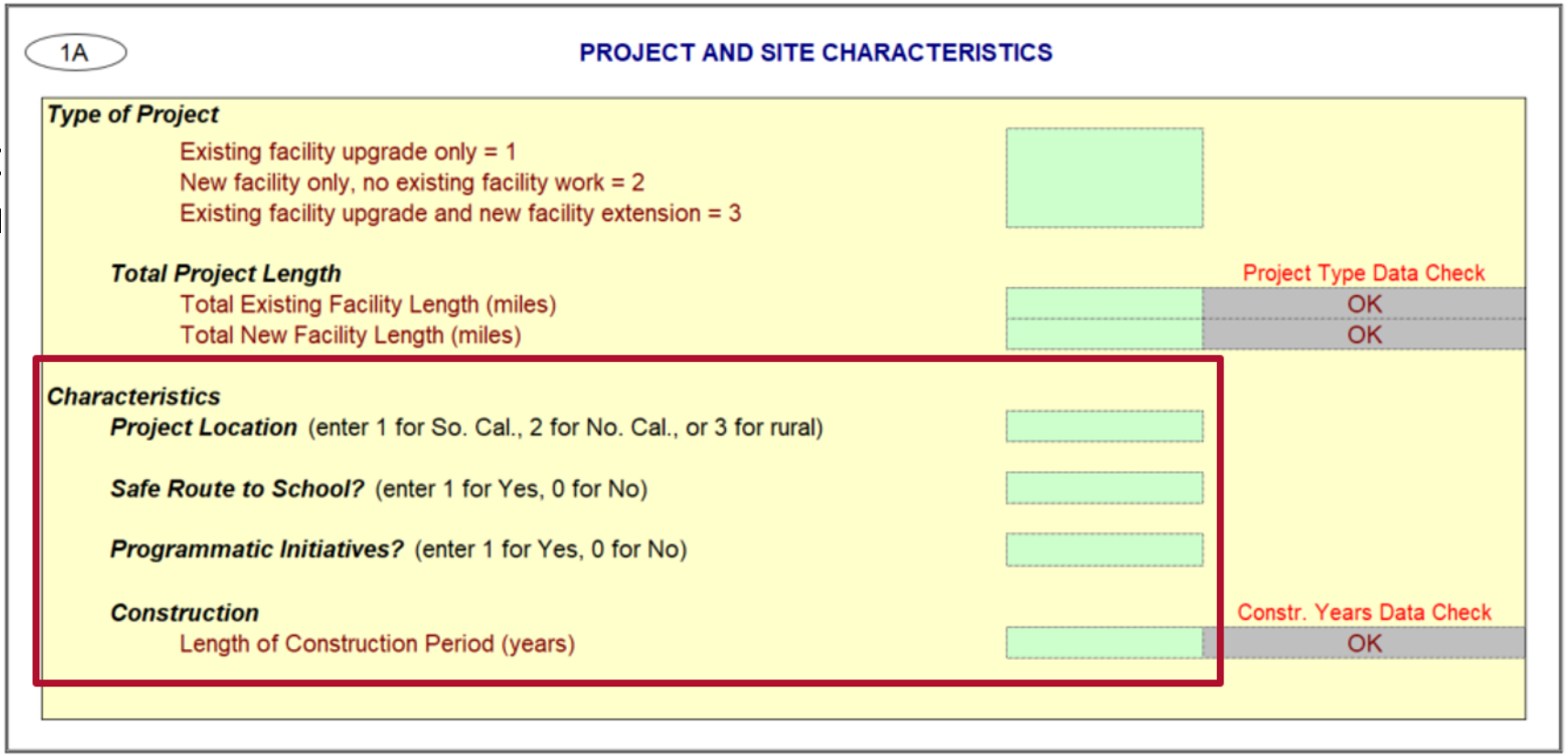
Safe Route to School? (Y/N)

Programmatic Initiatives? (Y/N)

- Non-infrastructure components

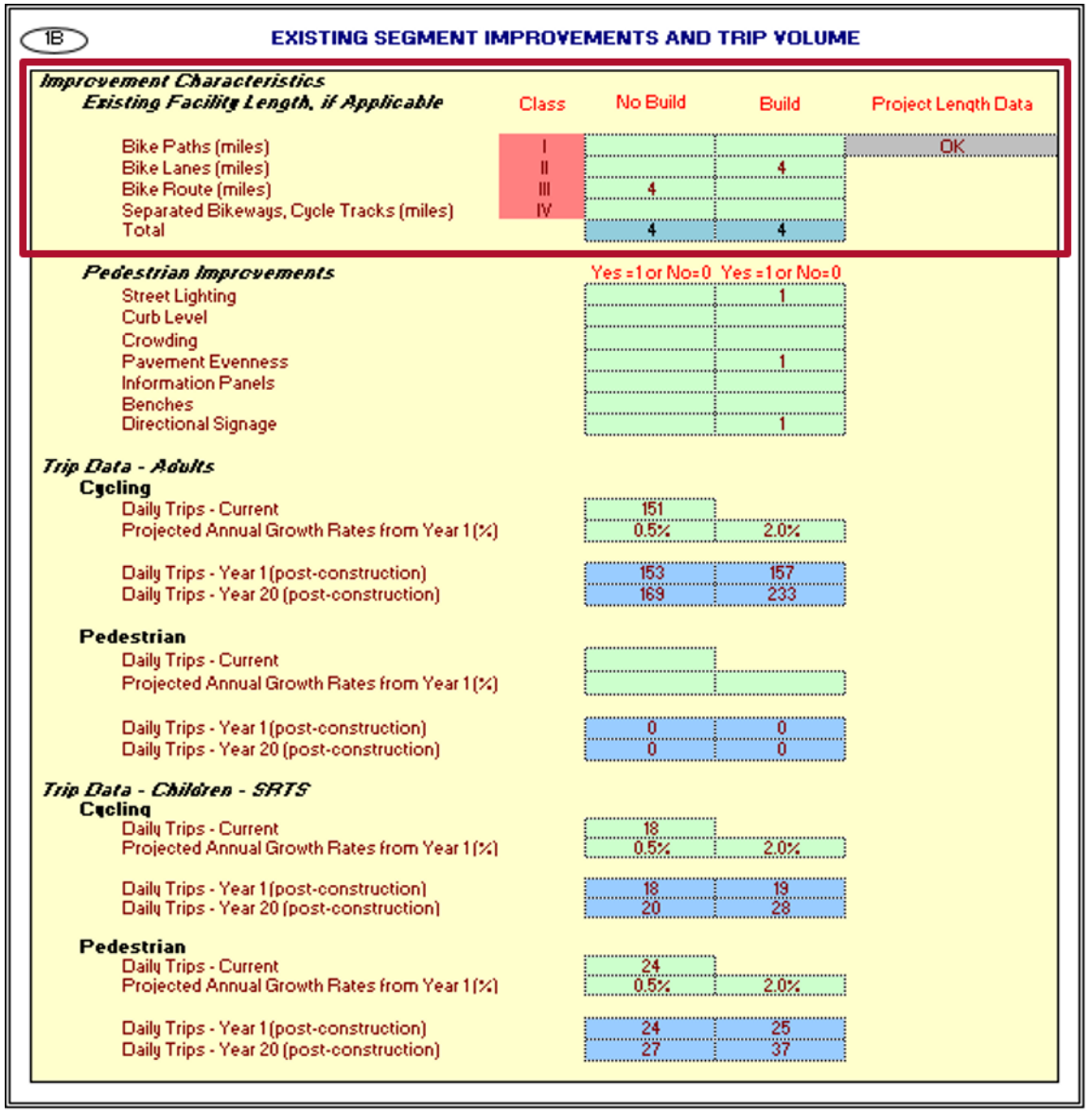
Length of Construction Period

- Years needed to construct project



1B) Existing Segment Improvements and Trip Volume – Improvement Characteristics

- **Required for project improving existing facility**
- Infrastructure projects are categorized as one of four bike facility classes
- **Existing Facility Length (miles) by class**
  - *Bike Paths*
  - *Bike Lanes*
  - *Bike Routes*
  - *Separated bikeways and tracks*
- Data check to ensure the data entry matches project length in Section 1A



1B EXISTING SEGMENT IMPROVEMENTS AND TRIP VOLUME

Improvement Characteristics Existing Facility Length, if Applicable	Class	No Build	Build	Project Length Data
Bike Paths (miles)	I			OK
Bike Lanes (miles)	II		4	
Bike Route (miles)	III	4		
Separated Bikeways, Cycle Tracks (miles)	IV			
Total		4	4	

Pedestrian Improvements	Yes =1 or No=0	Yes =1 or No=0
Street Lighting		1
Curb Level		
Crowding		
Pavement Evenness		1
Information Panels		
Benches		
Directional Signage		1

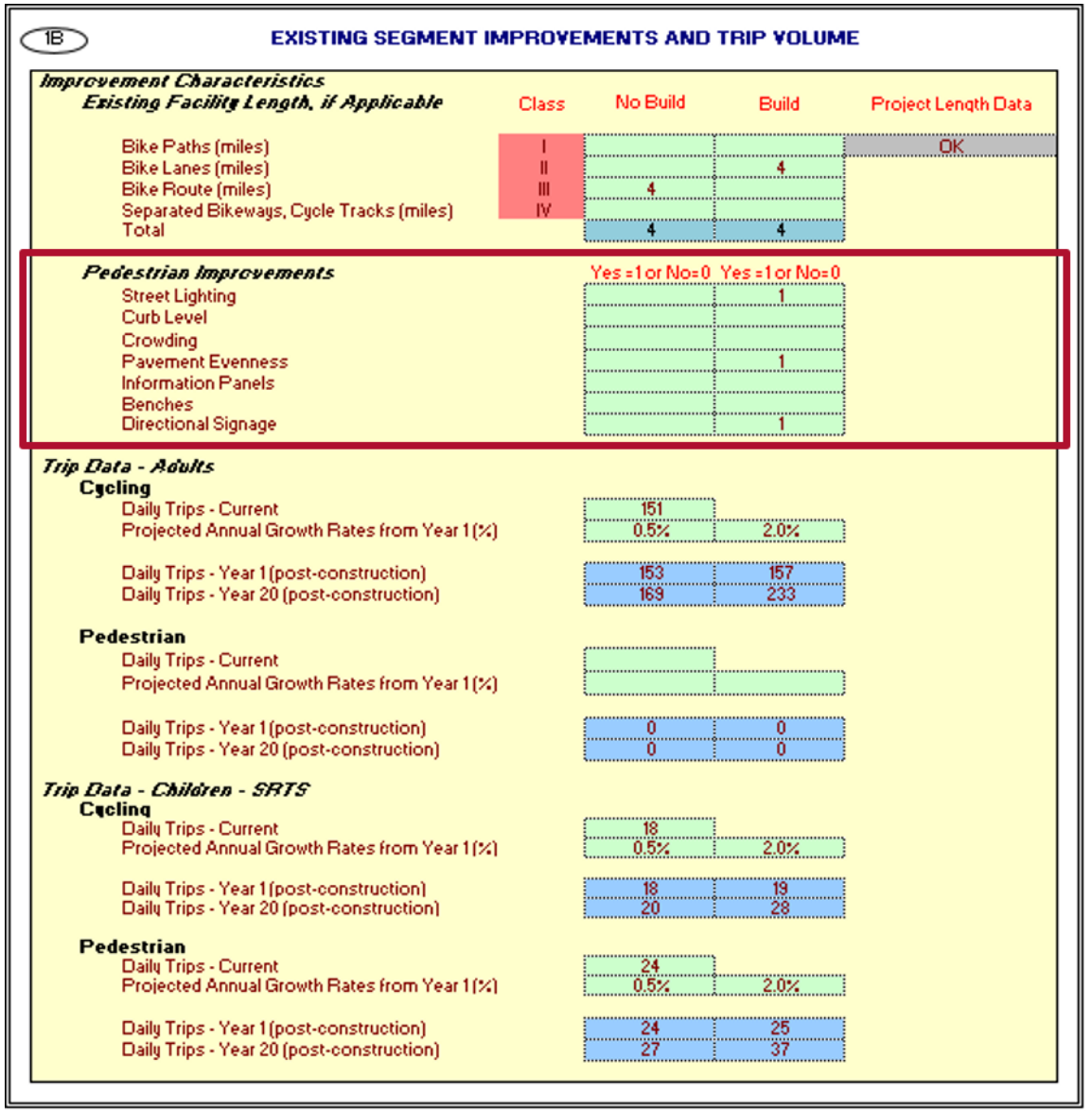
Trip Data - Adults		
Cycling		
Daily Trips - Current	151	
Projected Annual Growth Rates from Year 1 (%)	0.5%	2.0%
Daily Trips - Year 1 (post-construction)	153	157
Daily Trips - Year 20 (post-construction)	169	233
Pedestrian		
Daily Trips - Current		
Projected Annual Growth Rates from Year 1 (%)		
Daily Trips - Year 1 (post-construction)	0	0
Daily Trips - Year 20 (post-construction)	0	0

Trip Data - Children - SRTS		
Cycling		
Daily Trips - Current	18	
Projected Annual Growth Rates from Year 1 (%)	0.5%	2.0%
Daily Trips - Year 1 (post-construction)	18	19
Daily Trips - Year 20 (post-construction)	20	28
Pedestrian		
Daily Trips - Current	24	
Projected Annual Growth Rates from Year 1 (%)	0.5%	2.0%
Daily Trips - Year 1 (post-construction)	24	25
Daily Trips - Year 20 (post-construction)	27	37

1B) Existing Segment Improvements and Trip Volume – Improvement Characteristics

Pedestrian Improvements

- Yes = 1, No = 0
- Identifies pedestrian improvement project components, which contribute to Journey Quality benefits
  - *Street lighting*
  - *Curb level*
  - *Crowding*
  - *Pavement evenness*
  - *Information Panels*
  - *Benches*
  - *Directional Signage*



1B — EXISTING SEGMENT IMPROVEMENTS AND TRIP VOLUME

Improvement Characteristics / *Existing Facility Length, if Applicable*	Class	No Build	Build	Project Length Data
Bike Paths (miles)	I			OK
Bike Lanes (miles)	II		4	
Bike Route (miles)	III	4		
Separated Bikeways, Cycle Tracks (miles)	IV			
Total		4	4	
Pedestrian Improvements		Yes =1 or No=0	Yes =1 or No=0	
Street Lighting			1	
Curb Level				
Crowding				
Pavement Evenness			1	
Information Panels				
Benches				
Directional Signage			1	
Trip Data - Adults				
Cycling				
Daily Trips - Current		151		
Projected Annual Growth Rates from Year 1 (%)		0.5%	2.0%	
Daily Trips - Year 1 (post-construction)		153	157	
Daily Trips - Year 20 (post-construction)		169	233	
Pedestrian				
Daily Trips - Current				
Projected Annual Growth Rates from Year 1 (%)				
Daily Trips - Year 1 (post-construction)		0	0	
Daily Trips - Year 20 (post-construction)		0	0	
Trip Data - Children - SRTS				
Cycling				
Daily Trips - Current		18		
Projected Annual Growth Rates from Year 1 (%)		0.5%	2.0%	
Daily Trips - Year 1 (post-construction)		18	19	
Daily Trips - Year 20 (post-construction)		20	28	
Pedestrian				
Daily Trips - Current		24		
Projected Annual Growth Rates from Year 1 (%)		0.5%	2.0%	
Daily Trips - Year 1 (post-construction)		24	25	
Daily Trips - Year 20 (post-construction)		27	37	

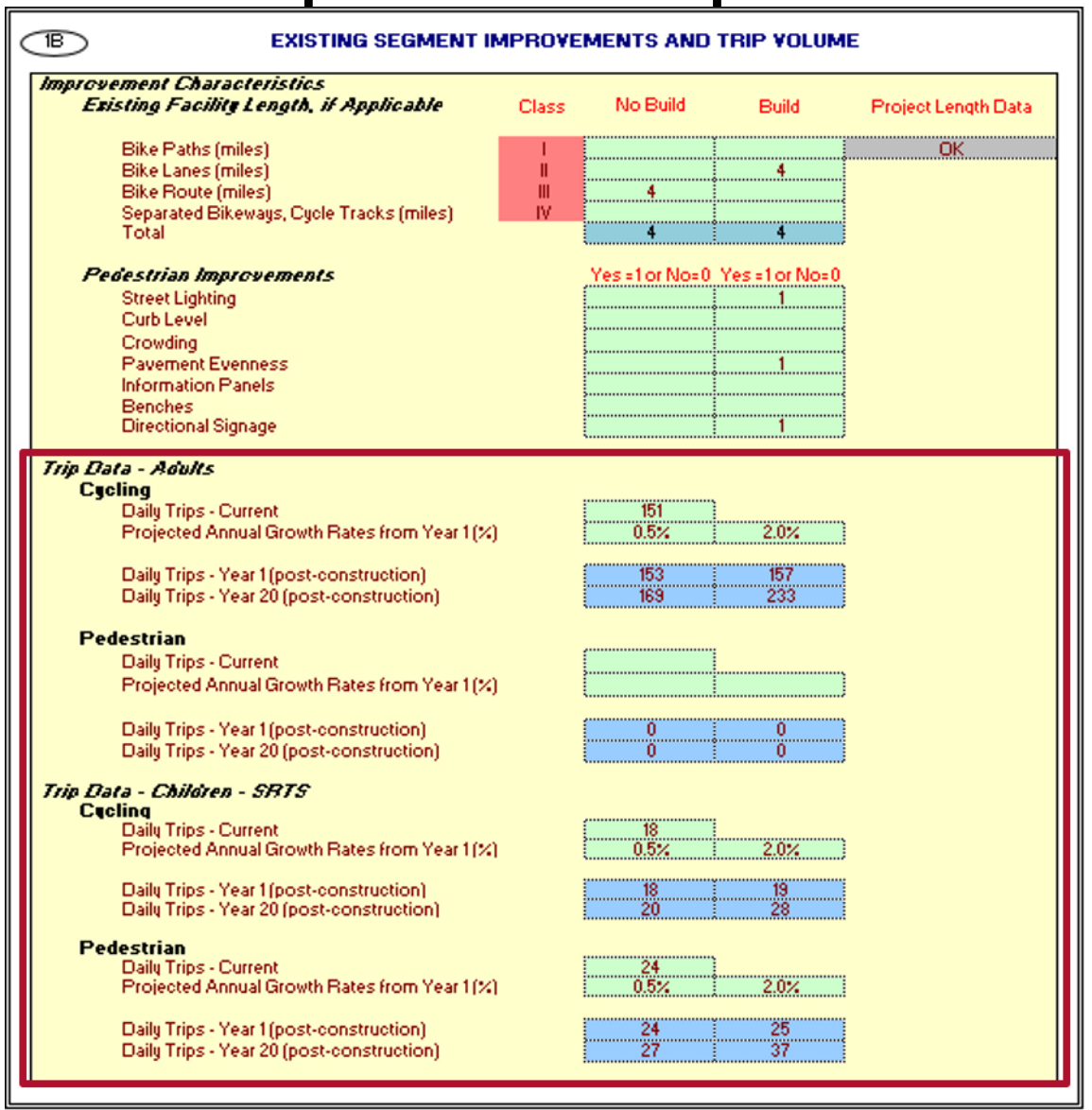
1B) Existing Segment Improvements and Trip Volume – Trip Data

Trip Data - Adults

- For Cycling and Pedestrian traffic
- *Current Daily Trips*
- *Projected Annual Growth Rates*
  - in No Build and Build scenarios
- *Daily Trips, post-construction*
  - Year 1 and Year 20, No Build and Build scenarios
  - Calculated from above inputs
  - Can be overwritten if better data is available

Trip Data - Children - SRTS

- Same inputs as above
- Only required for SRTS projects



1B

EXISTING SEGMENT IMPROVEMENTS AND TRIP VOLUME

Improvement Characteristics / *Existing Facility Length, if Applicable*	Class	No Build	Build	Project Length Data
Bike Paths (miles)	I			OK
Bike Lanes (miles)	II		4	
Bike Route (miles)	III	4		
Separated Bikeways, Cycle Tracks (miles)	IV			
Total		4	4	

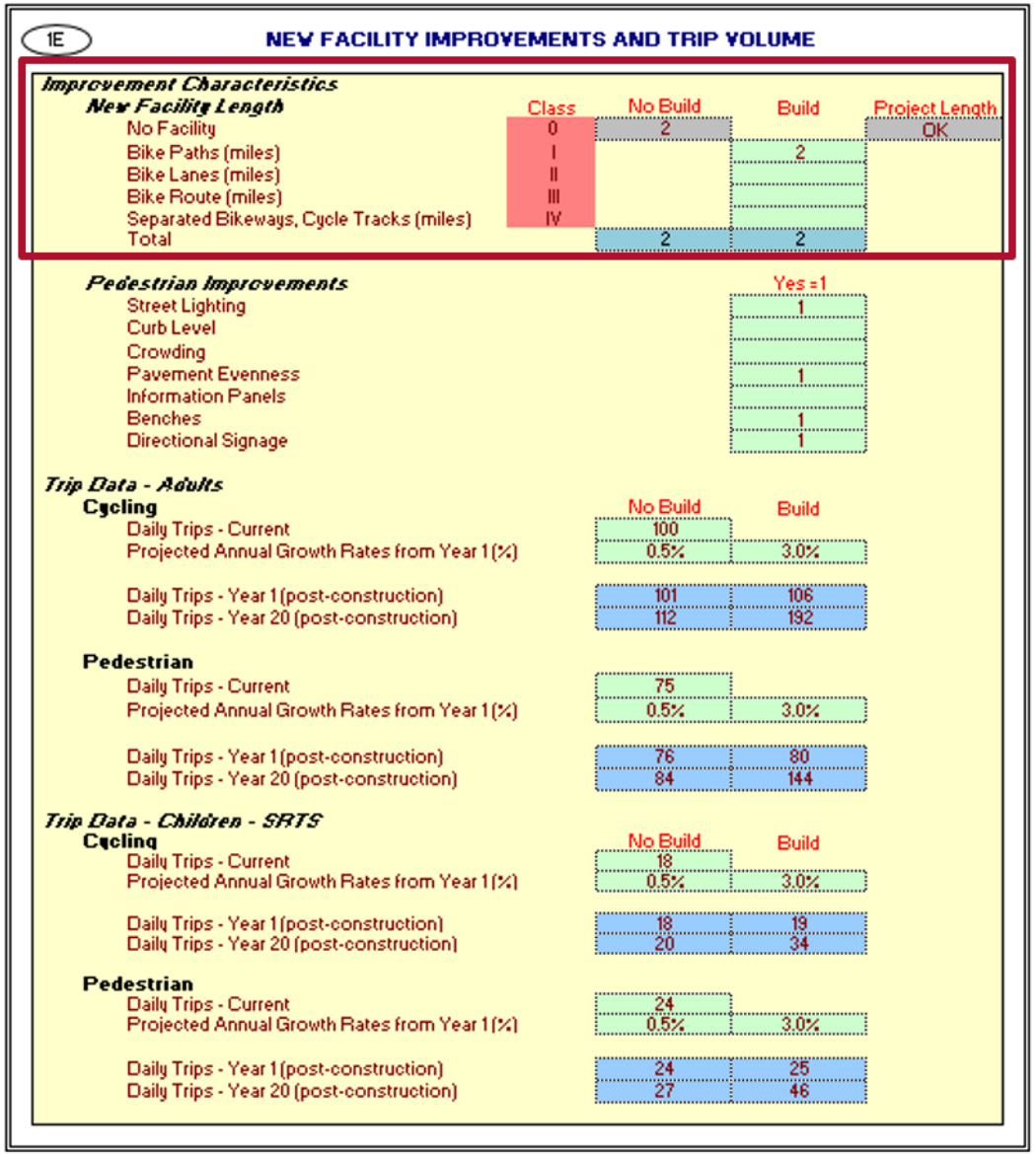
Pedestrian Improvements	Yes =1 or No=0	Yes =1 or No=0
Street Lighting		1
Curb Level		
Crowding		
Pavement Evenness		1
Information Panels		
Benches		
Directional Signage		1

Trip Data - Adults		
Cycling		
Daily Trips - Current	151	
Projected Annual Growth Rates from Year 1 (%)	0.5%	2.0%
Daily Trips - Year 1 (post-construction)	153	157
Daily Trips - Year 20 (post-construction)	169	233
Pedestrian		
Daily Trips - Current		
Projected Annual Growth Rates from Year 1 (%)		
Daily Trips - Year 1 (post-construction)	0	0
Daily Trips - Year 20 (post-construction)	0	0

Trip Data - Children - SRTS		
Cycling		
Daily Trips - Current	18	
Projected Annual Growth Rates from Year 1 (%)	0.5%	2.0%
Daily Trips - Year 1 (post-construction)	18	19
Daily Trips - Year 20 (post-construction)	20	28
Pedestrian		
Daily Trips - Current	24	
Projected Annual Growth Rates from Year 1 (%)	0.5%	2.0%
Daily Trips - Year 1 (post-construction)	24	25
Daily Trips - Year 20 (post-construction)	27	37

1E) New Facility Improvements & Trip Volume – Improvement Characteristics

- **Required for new facility**
- **New Facility Length (miles) by class**
  - *No Facility (based on entry in Section 1A)*
  - *Bike Paths*
  - *Bike Lanes*
  - *Bike Route*
  - *Separated Bikeways, Cycle Tracks*
  - Data check to ensure the data entry matches project length in Section 1A



1E — NEW FACILITY IMPROVEMENTS AND TRIP VOLUME

Improvement Characteristics

New Facility Length

	Class	No Build	Build	Project Length
No Facility	0	2		OK
Bike Paths (miles)	I		2	
Bike Lanes (miles)	II			
Bike Route (miles)	III			
Separated Bikeways, Cycle Tracks (miles)	IV			
Total		2	2	

Pedestrian Improvements

	Yes =1
Street Lighting	1
Curb Level	
Crowding	
Pavement Evenness	1
Information Panels	
Benches	1
Directional Signage	1

Trip Data - Adults

Cycling

	No Build	Build
Daily Trips - Current	100	
Projected Annual Growth Rates from Year 1 (%)	0.5%	3.0%
Daily Trips - Year 1 (post-construction)	101	106
Daily Trips - Year 20 (post-construction)	112	192

Pedestrian

Daily Trips - Current	75	
Projected Annual Growth Rates from Year 1 (%)	0.5%	3.0%
Daily Trips - Year 1 (post-construction)	76	80
Daily Trips - Year 20 (post-construction)	84	144

Trip Data - Children - SRTS

Cycling

	No Build	Build
Daily Trips - Current	18	
Projected Annual Growth Rates from Year 1 (%)	0.5%	3.0%
Daily Trips - Year 1 (post-construction)	18	19
Daily Trips - Year 20 (post-construction)	20	34

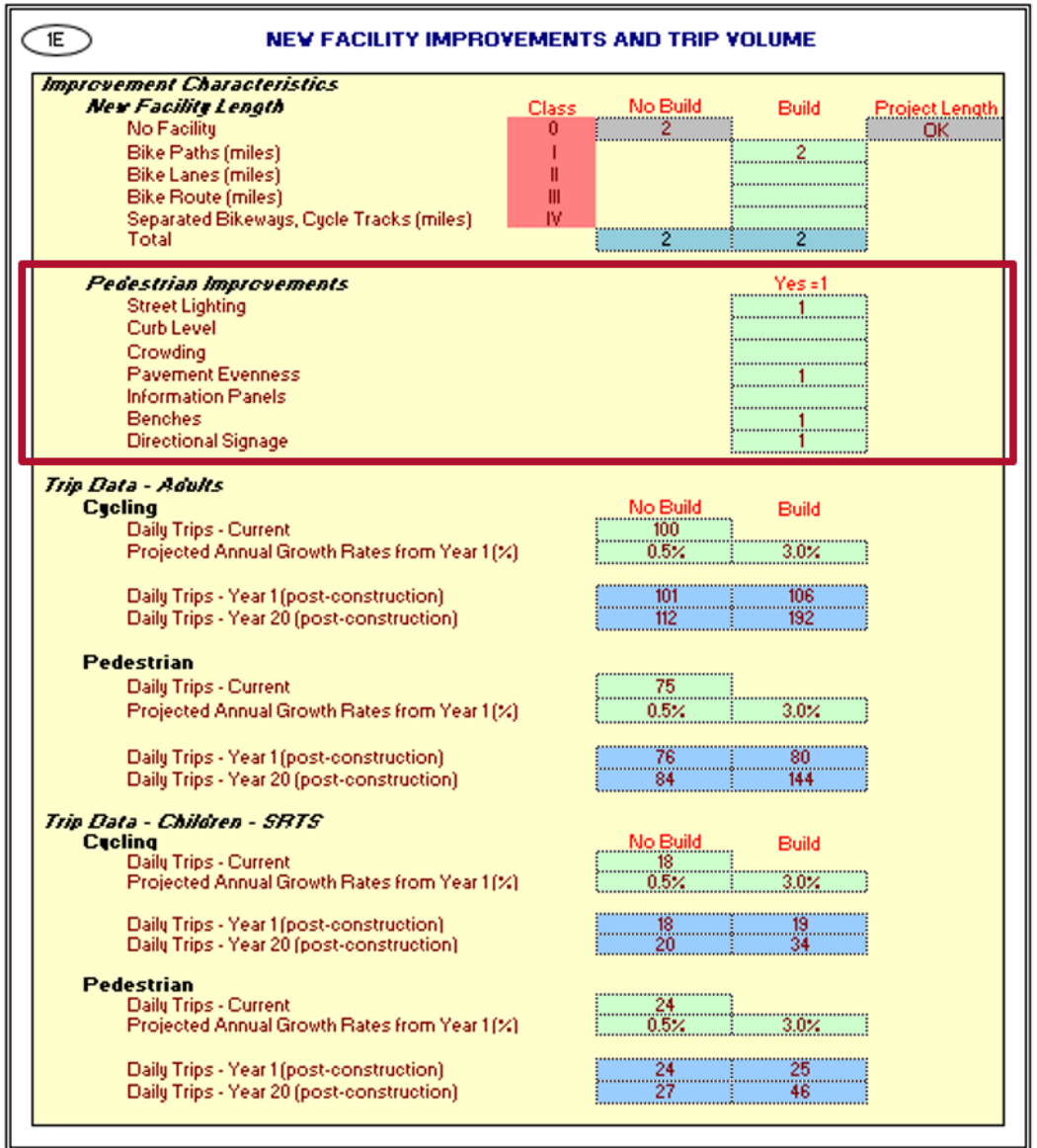
Pedestrian

Daily Trips - Current	24	
Projected Annual Growth Rates from Year 1 (%)	0.5%	3.0%
Daily Trips - Year 1 (post-construction)	24	25
Daily Trips - Year 20 (post-construction)	27	46

1E) New Facility Improvements & Trip Value – Improvement Characteristics

Pedestrian Improvements

- Yes = 1
- Identifies new pedestrian improvement components, which contribute to Journey Quality benefits:
  - *Street lighting*
  - *Curb level*
  - *Crowding*
  - *Pavement evenness*
  - *Information Panels*
  - *Benches*
  - *Directional Signage*



1E

NEW FACILITY IMPROVEMENTS AND TRIP VOLUME

Improvement Characteristics	Class	No Build	Build	Project Length
New Facility Length				
No Facility	0	2		OK
Bike Paths (miles)	I		2	
Bike Lanes (miles)	II			
Bike Route (miles)	III			
Separated Bikeways, Cycle Tracks (miles)	IV			
Total		2	2	

Pedestrian Improvements	Yes =1
Street Lighting	1
Curb Level	
Crowding	
Pavement Evenness	1
Information Panels	
Benches	1
Directional Signage	1

Trip Data - Adults	No Build	Build
Cycling		
Daily Trips - Current	100	
Projected Annual Growth Rates from Year 1 (%)	0.5%	3.0%
Daily Trips - Year 1 (post-construction)	101	106
Daily Trips - Year 20 (post-construction)	112	192
Pedestrian		
Daily Trips - Current	75	
Projected Annual Growth Rates from Year 1 (%)	0.5%	3.0%
Daily Trips - Year 1 (post-construction)	76	80
Daily Trips - Year 20 (post-construction)	84	144

Trip Data - Children - SRTS	No Build	Build
Cycling		
Daily Trips - Current	18	
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Pedestrian		
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Daily Trips - Year 1 (post-construction)	24	25
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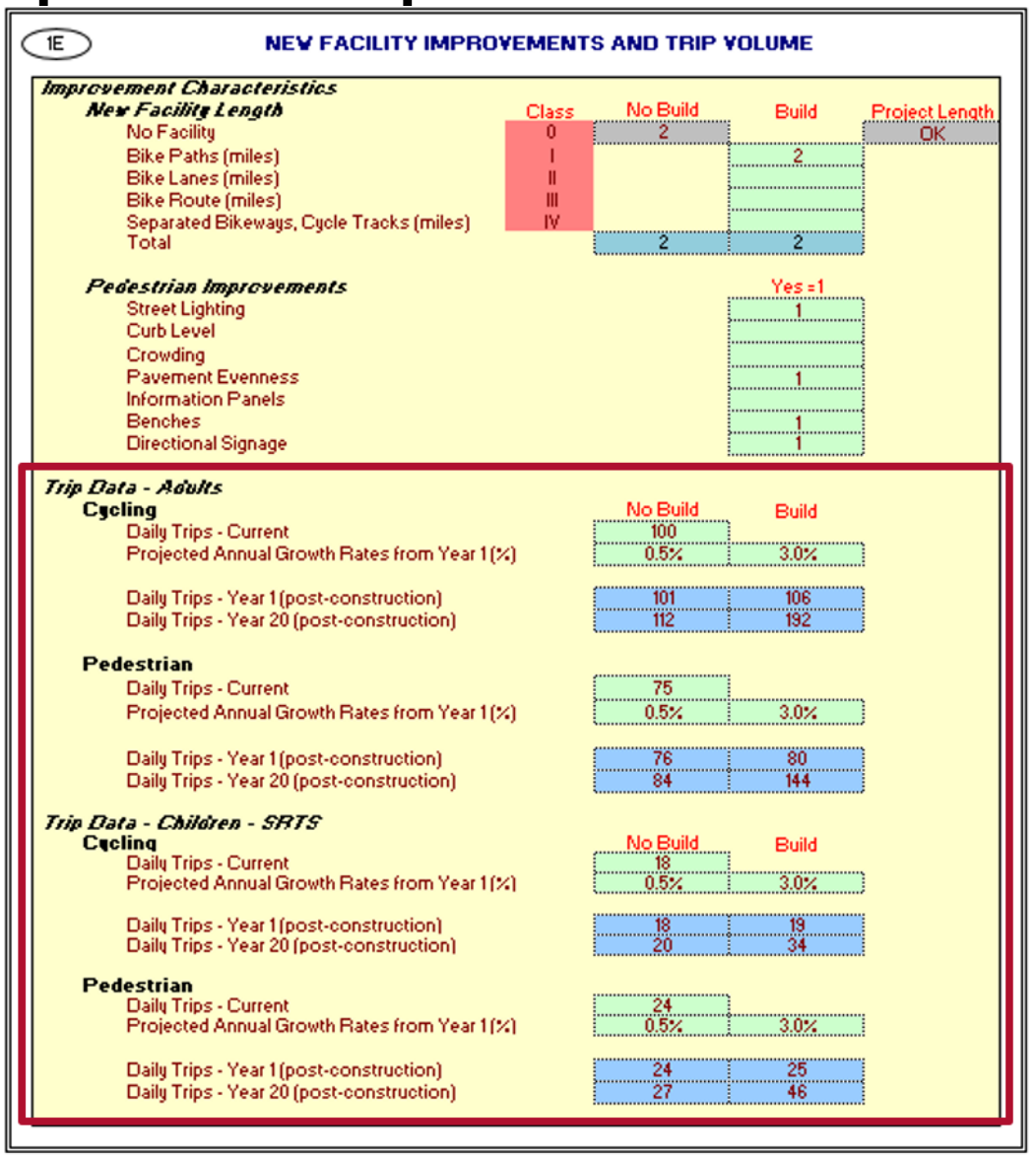
1E) New Facility Improvements & Trip Value – Improvement Characteristics

Trip Data - Adults

- For Cycling and Pedestrian traffic
- *Current Daily Trips*
- *Projected Annual Growth Rates*
  - in No Build and Build scenarios
- *Daily Trips, post-construction*
  - Year 1 and Year 20, No Build and Build scenarios
  - Calculated from above inputs
  - Can be overwritten if better data is available

Trip Data - Children – SRTS

- Same inputs as above
- Only required for SRTS projects



1E

NEW FACILITY IMPROVEMENTS AND TRIP VOLUME

Improvement Characteristics

New Facility Length

	Class	No Build	Build	Project Length
No Facility	0	2		OK
Bike Paths (miles)	I		2	
Bike Lanes (miles)	II			
Bike Route (miles)	III			
Separated Bikeways, Cycle Tracks (miles)	IV			
Total		2	2	

Pedestrian Improvements

	Yes =1
Street Lighting	1
Curb Level	
Crowding	
Pavement Evenness	1
Information Panels	
Benches	1
Directional Signage	1

Trip Data - Adults

Cycling

	No Build	Build
Daily Trips - Current	100	
Projected Annual Growth Rates from Year 1 (%)	0.5%	3.0%
Daily Trips - Year 1 (post-construction)	101	106
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Trip Data - Children - SRTS

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Daily Trips - Current	24	
Projected Annual Growth Rates from Year 1 (%)	0.5%	3.0%
Daily Trips - Year 1 (post-construction)	24	25
Daily Trips - Year 20 (post-construction)	27	46

1C) Intersection Improvements – Reduced Delay Due to Intersection Improvements

Required for intersection or safety improvement

Number of Improved Intersections

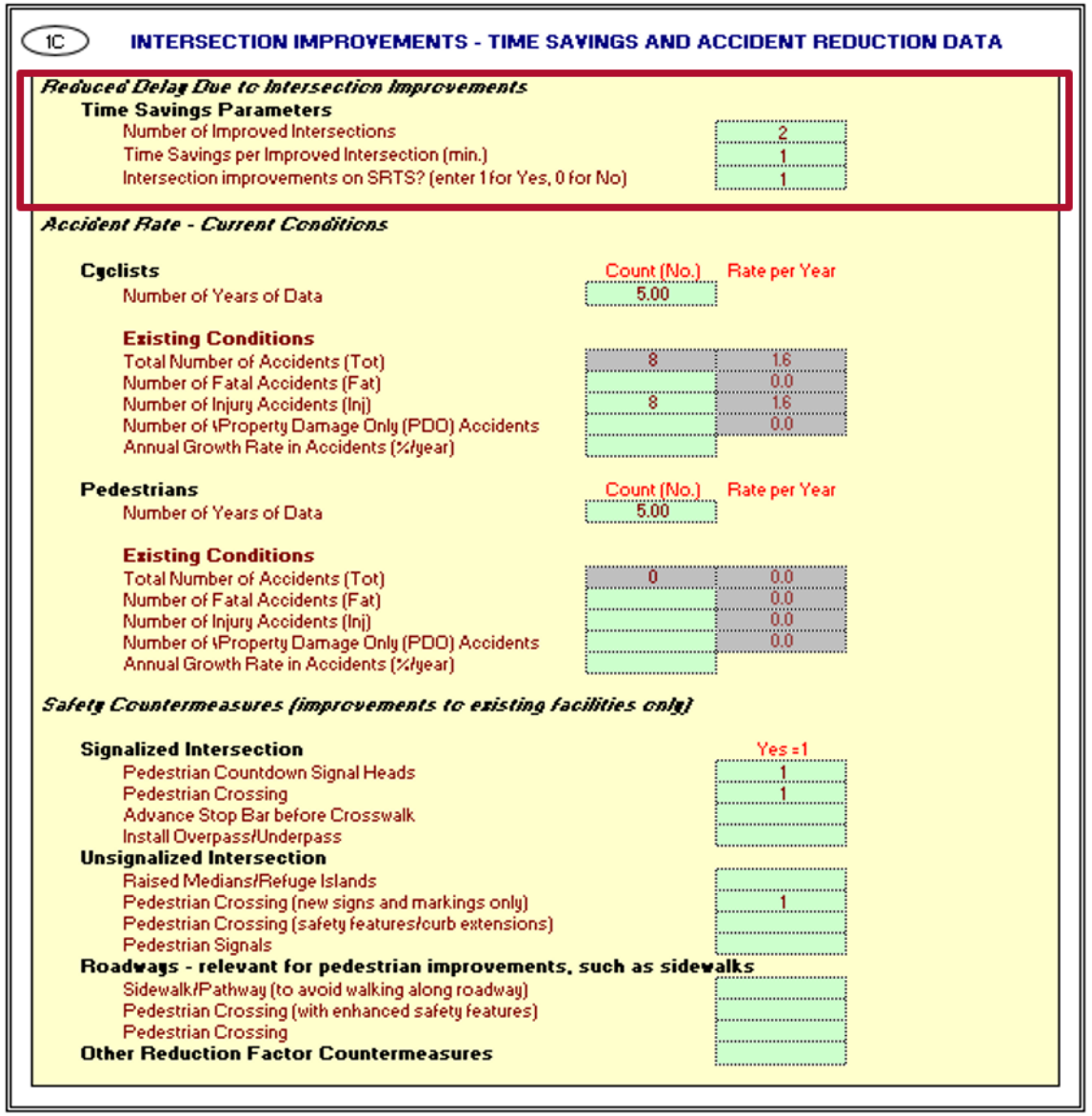
- Improved intersections in the project area (if applicable to project)

Time Savings per Improved Intersection

- Expected savings in minutes per intersection due to improvements

Intersection improvements on SRTS? (Y/N)

- Yes = 1, No = 0



1C INTERSECTION IMPROVEMENTS - TIME SAVINGS AND ACCIDENT REDUCTION DATA

Reduced Delay Due to Intersection Improvements

Time Savings Parameters

Number of Improved Intersections	2
Time Savings per Improved Intersection (min.)	1
Intersection improvements on SRTS? (enter 1 for Yes, 0 for No)	1

Accident Rate - Current Conditions

Cyclists

	Count (No.)	Rate per Year
Number of Years of Data	5.00	
Existing Conditions		
Total Number of Accidents (Tot)	8	1.6
Number of Fatal Accidents (Fat)		0.0
Number of Injury Accidents (Inj)	8	1.6
Number of \Property Damage Only (PDO) Accidents		0.0
Annual Growth Rate in Accidents (%/year)		

Pedestrians

	Count (No.)	Rate per Year
Number of Years of Data	5.00	
Existing Conditions		
Total Number of Accidents (Tot)	0	0.0
Number of Fatal Accidents (Fat)		0.0
Number of Injury Accidents (Inj)		0.0
Number of \Property Damage Only (PDO) Accidents		0.0
Annual Growth Rate in Accidents (%/year)		

Safety Countermeasures (improvements to existing facilities only)

	Yes =1
Signalized Intersection	
Pedestrian Countdown Signal Heads	1
Pedestrian Crossing	1
Advance Stop Bar before Crosswalk	
Install Overpass/Underpass	
Unsignalized Intersection	
Raised Medians/Refuge Islands	
Pedestrian Crossing (new signs and markings only)	1
Pedestrian Crossing (safety features/curb extensions)	
Pedestrian Signals	
Roadways - relevant for pedestrian improvements, such as sidewalks	
Sidewalk/Pathway (to avoid walking along roadway)	
Pedestrian Crossing (with enhanced safety features)	
Pedestrian Crossing	
Other Reduction Factor Countermeasures	

1C) Intersection Improvements – Accident Rate – Current Conditions

For Cyclists

Number of Years of Data

- Years of accident data to be entered

Total Accidents in Existing Conditions

- *Fatal, Injury, Property Damage Only*
- Enter actual number of accidents in the project area

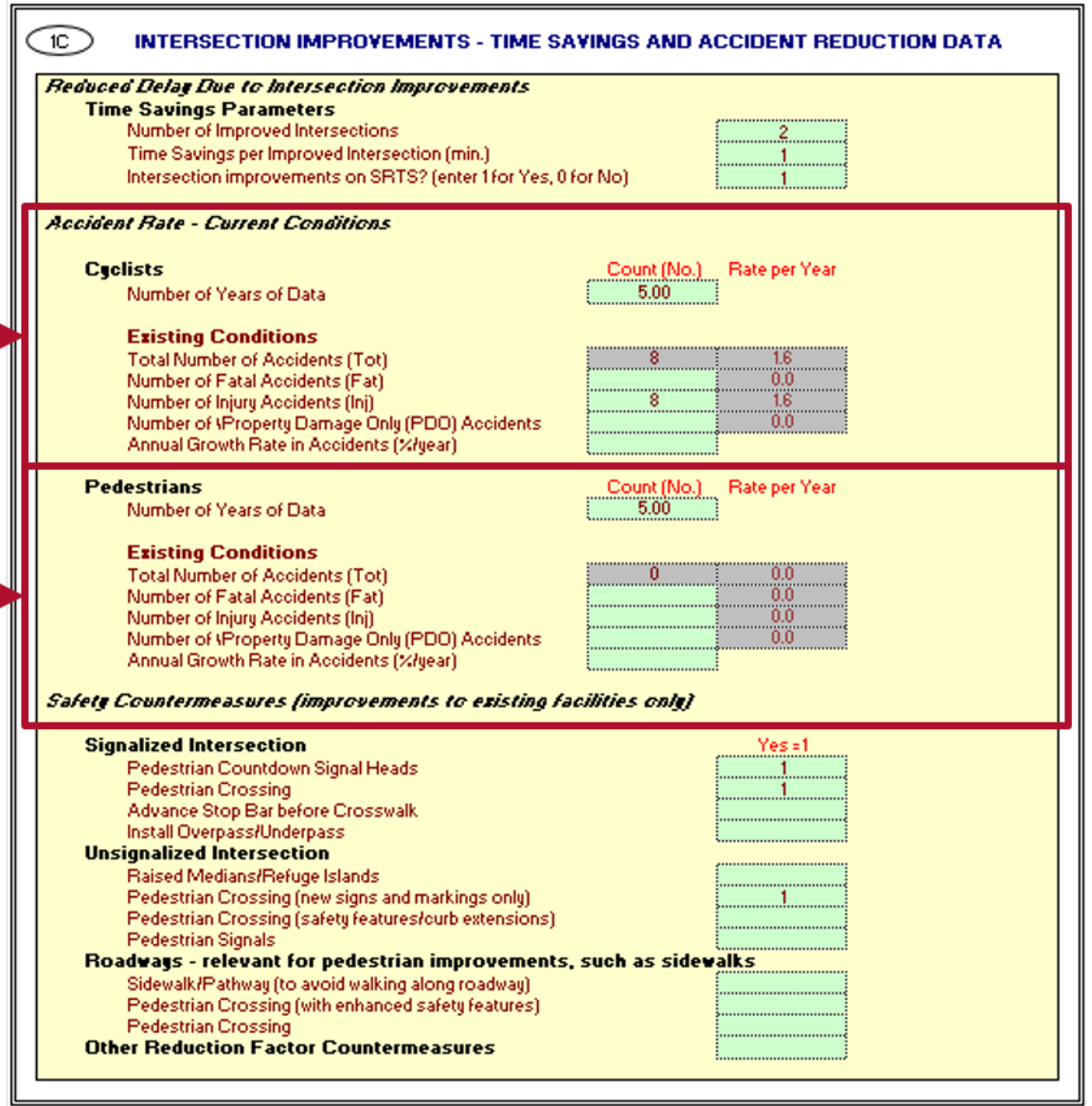
Annual Growth Rate in Accidents

- Applies to accidents in No Build and Build scenarios

For Pedestrians

- Same inputs as for bicyclists

NOTE: Current practice at Caltrans and CA agencies refers to vehicular incidents or "accidents" as "collisions" or "crashes." Current versions of Cal-B/C still refer to collisions/crashes as accidents.



1C INTERSECTION IMPROVEMENTS - TIME SAVINGS AND ACCIDENT REDUCTION DATA

Reduced Delay Due to Intersection Improvements

Time Savings Parameters

Number of Improved Intersections	2
Time Savings per Improved Intersection (min.)	1
Intersection improvements on SRTS? (enter 1 for Yes, 0 for No)	1

Accident Rate - Current Conditions

Cyclists

	Count (No.)	Rate per Year
Number of Years of Data	5.00	
Existing Conditions		
Total Number of Accidents (Tot)	8	1.6
Number of Fatal Accidents (Fat)		0.0
Number of Injury Accidents (Inj)	8	1.6
Number of \Property Damage Only (PDO) Accidents		0.0
Annual Growth Rate in Accidents (%/year)		

Pedestrians

	Count (No.)	Rate per Year
Number of Years of Data	5.00	
Existing Conditions		
Total Number of Accidents (Tot)	0	0.0
Number of Fatal Accidents (Fat)		0.0
Number of Injury Accidents (Inj)		0.0
Number of \Property Damage Only (PDO) Accidents		0.0
Annual Growth Rate in Accidents (%/year)		

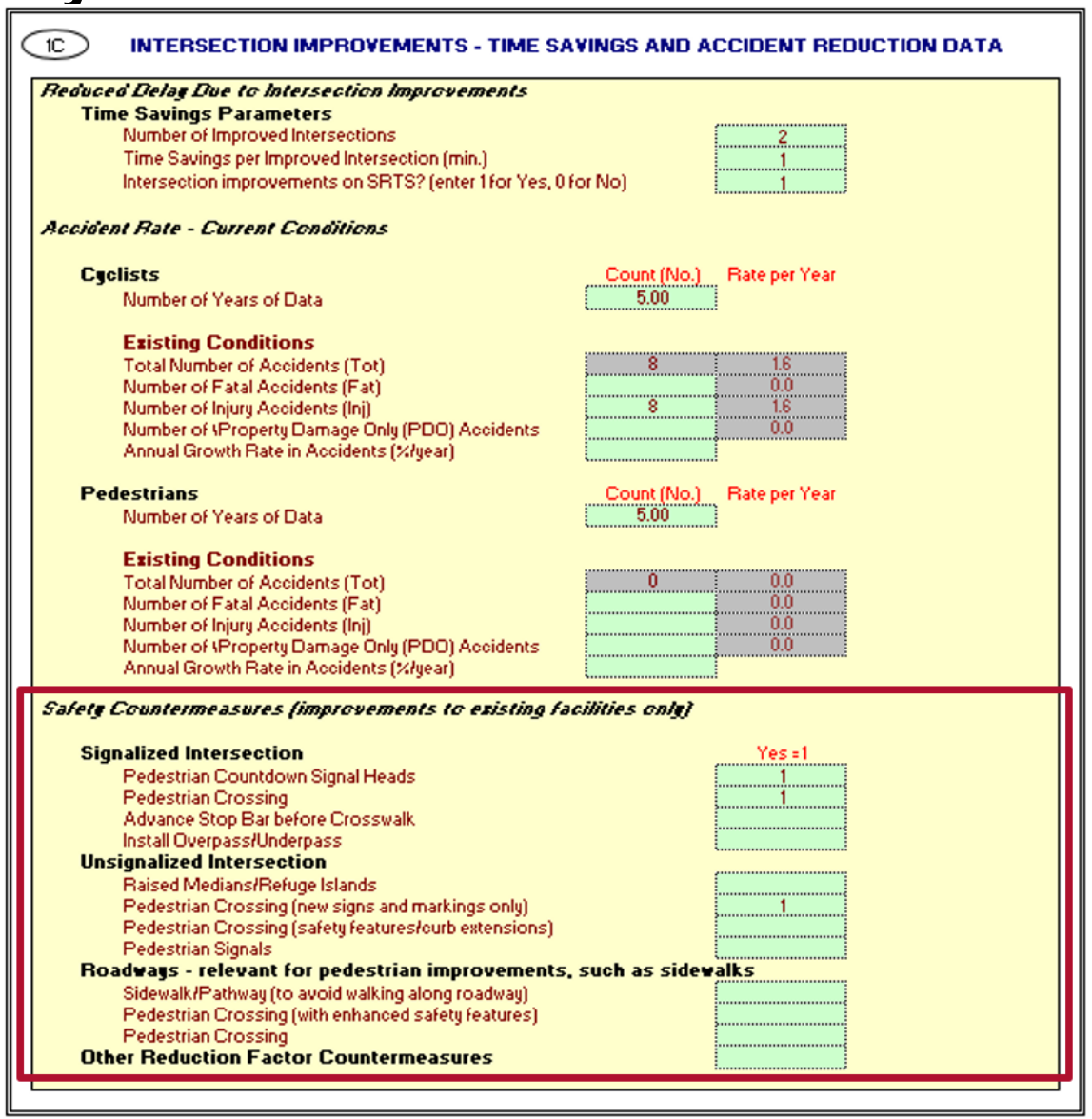
Safety Countermeasures (improvements to existing facilities only)

	Yes =1
Signalized Intersection	
Pedestrian Countdown Signal Heads	1
Pedestrian Crossing	1
Advance Stop Bar before Crosswalk	
Install Overpass/Underpass	
Unsignalized Intersection	
Raised Medians/Refuge Islands	
Pedestrian Crossing (new signs and markings only)	1
Pedestrian Crossing (safety features/curb extensions)	
Pedestrian Signals	
Roadways - relevant for pedestrian improvements, such as sidewalks	
Sidewalk/Pathway (to avoid walking along roadway)	
Pedestrian Crossing (with enhanced safety features)	
Pedestrian Crossing	
Other Reduction Factor Countermeasures	

1C) Intersection Improvements – Safety Countermeasures

- Yes = 1
- Identifies safety countermeasures at existing facilities that contribute to bicycle and pedestrian accident cost savings
- **Signalized Intersection**
- **Unsignalized Intersection**
- **Roadways** (pedestrian improvements only)
- **Other Reduction Factor Countermeasures**

- Used in accident cost savings in the Intersection Safety worksheet



1C INTERSECTION IMPROVEMENTS - TIME SAVINGS AND ACCIDENT REDUCTION DATA

Reduced Delay Due to Intersection Improvements

Time Savings Parameters

Number of Improved Intersections	2
Time Savings per Improved Intersection (min.)	1
Intersection improvements on SRTS? (enter 1 for Yes, 0 for No)	1

Accident Rate - Current Conditions

	Count (No.)	Rate per Year
Cyclists		
Number of Years of Data	5.00	
Existing Conditions		
Total Number of Accidents (Tot)	8	1.6
Number of Fatal Accidents (Fat)		0.0
Number of Injury Accidents (Inj)	8	1.6
Number of \Property Damage Only (PDO) Accidents		0.0
Annual Growth Rate in Accidents (%/year)		
Pedestrians	Count (No.)	Rate per Year
Number of Years of Data	5.00	
Existing Conditions		
Total Number of Accidents (Tot)	0	0.0
Number of Fatal Accidents (Fat)		0.0
Number of Injury Accidents (Inj)		0.0
Number of \Property Damage Only (PDO) Accidents		0.0
Annual Growth Rate in Accidents (%/year)		

Safety Countermeasures (improvements to existing facilities only)

	Yes =1
Signalized Intersection	
Pedestrian Countdown Signal Heads	1
Pedestrian Crossing	1
Advance Stop Bar before Crosswalk	
Install Overpass/Underpass	
Unsignalized Intersection	
Raised Medians/Refuge Islands	
Pedestrian Crossing (new signs and markings only)	1
Pedestrian Crossing (safety features/curb extensions)	
Pedestrian Signals	
Roadways - relevant for pedestrian improvements, such as sidewalks	
Sidewalk/Pathway (to avoid walking along roadway)	
Pedestrian Crossing (with enhanced safety features)	
Pedestrian Crossing	
Other Reduction Factor Countermeasures	

1D) General User Characteristics (Based on Project Location)

Option to overwrite Cal-B/C model defaults for any project

- Default Parameters for:
  - Distribution of Trip Purpose
  - Distance traveled
  - For Cyclists and Pedestrians
  - No Build and Build scenarios
- Based on Project Location entry in Section 1A
- Characteristics of facility users are used in estimating facility benefits
- Can be overridden if better data is available
- Refer to Module 5 for default parameter sources

1D GENERAL USER CHARACTERISTICS (BASED ON PROJECT LOCATION)

Cycling

Trip Purpose	No Build	Build
Commuting Trip Purpose (%)	8%	8%
Recreational Trip Purpose (%)	15%	15%
Other Destinations Trip Purpose (%)	77%	77%
General Trip Characteristics		
Overall Average Distance Traveled / Trip (mi)	1.83	1.83
Children - SRTS - Distance Traveled / Trip (mi)	0.88	0.88

Pedestrian

Trip Purpose		
Commuting Trip Purpose (%)	5%	5%
Recreational Trip Purpose (%)	10%	10%
Other Destination Trip Purpose (%)	85%	85%
General Trip Characteristics		
Overall Average Distance Traveled / Trip (mi)	0.52	0.52
Children - SRTS - Distance Traveled / Trip (mi)	0.46	0.46

1F) Project Costs

Required for all infrastructure projects

- All project costs should be entered into five cost columns as needed
- Project costs should be entered as incremental rather than total costs
  - Incremental costs are difference between No Build and Build scenarios
- Costs must be entered in thousands of dollars ($1,000)
- Project costs must be entered in constant dollars, in same year as economic parameters used for benefit calculations (current year in Cal-B/C is 2016)
  - Modules 5 and 6c will go into more details about year for current dollars

1F

PROJECT COSTS AND REQUESTED FUNDS (enter in thousands of dollars)

Col. no.

Year	Construction Years	DIRECT PROJECT COSTS: INITIAL COSTS: Project Support	INITIAL COSTS: R / W	INITIAL COSTS: Construction	SUBSEQUENT COSTS: Maint./ Op.	SUBSEQUENT COSTS: Rehab.		TOTAL COSTS (in dollars): Constant Dollars	TOTAL COSTS (in dollars): Present Value
Infrastructure Program Costs									
1	1		$500.0	$2,000.0	<-- Must enter a cost			$2,500,000	$2,500,000
2	1			$2,000.0				2,000,000	1,923,077
3	0							0	0
4	0							0	0
5	0							0	0
6	0							0	0
7	0							0	0
8	0							0	0
Annual Infrastructure O&M Costs									
1					$5			$5,000	$4,623
2					$5			5,000	4,445
3					$5			5,000	4,274
4					$5			5,000	4,110
5					$5			5,000	3,952
6					$5			5,000	3,800
7					$5			5,000	3,653
8					$5			5,000	3,513
9					$5			5,000	3,378
10					$5			5,000	3,248
11					$5			5,000	3,123
12					$5			5,000	3,003
13					$5			5,000	2,887
14					$5			5,000	2,776
15					$5			5,000	2,670
16					$5			5,000	2,567
17					$5			5,000	2,468
18					$5			5,000	2,373
19					$5			5,000	2,282
20					$5			5,000	2,194
Total		$0	$500	$4,000	$100	$0		$4,600,000	$4,488,415

ATP REQUESTED FUNDS	
Total	

Project Information

1F) Project Costs

- Up to eight (8) years of initial infrastructure project costs allowed
- Costs must be entered for each year to be consistent with “Length of Construction Period” entered in Section 1A
- Following construction, project opens and the 20-year project operating period begins
- Year 1 (Base Year) described in previous slides represented by the “1” under the “Project Open” header

1F

PROJECT COSTS AND REQUESTED FUNDS (enter in thousands of dollars)

Col. no.

Year	Construction Years	DIRECT PROJECT COSTS					TOTAL COSTS (in dollars)	
		INITIAL COSTS			SUBSEQUENT COSTS			
		Project Support	R / W	Construction	Maint./ Op.	Rehab.	Constant Dollars	Present Value
Infrastructure Program Costs								
1	1		$500.0	$2,000.0	<-- Must enter a cost		$2,500,000	$2,500,000
2	1			$2,000.0			2,000,000	1,923,077
3	0						0	0
4	0						0	0
5	0						0	0
6	0						0	0
7	0						0	0
8	0						0	0
Annual Infrastructure O&M Costs								
1					$5		$5,000	$4,623
2					$5		5,000	4,445
3					$5		5,000	4,274
4					$5		5,000	4,110
5					$5		5,000	3,952
6					$5		5,000	3,800
7					$5		5,000	3,653
8					$5		5,000	3,513
9					$5		5,000	3,378
10					$5		5,000	3,248
11					$5		5,000	3,123
12					$5		5,000	3,003
13					$5		5,000	2,887
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15					$5		5,000	2,670
16					$5		5,000	2,567
17					$5		5,000	2,468
18					$5		5,000	2,373
19					$5		5,000	2,282
20					$5		5,000	2,194
Total		$0	$500	$4,000	$100	$0	$4,600,000	$4,488,415

ATP REQUESTED FUNDS	
Total	

Project Information

1

1F) Project Costs – Direct Project Costs

Initial Costs

- Project support
- Right-of-way acquisition costs
- Construction costs
- Project should incur no initial project costs in or after the project opening year

Subsequent Costs

- Any costs incurred after the project is constructed and open
  - Operating and Maintenance (O&M) costs
  - Rehabilitation costs
- Module 8 discusses project cost sources, including O&M costs

1F

PROJECT COSTS AND REQUESTED FUNDS (enter in thousands of dollars)

Col. no.

Year	Construction Years	DIRECT PROJECT COSTS: INITIAL COSTS: Project Support	INITIAL COSTS: R / W	INITIAL COSTS: Construction	SUBSEQUENT COSTS: Maint./ Op.	SUBSEQUENT COSTS: Rehab.	TOTAL COSTS (in dollars): Constant Dollars	TOTAL COSTS (in dollars): Present Value
Infrastructure Program Costs								
1	1		$500.0	$2,000.0	<-- Must enter a cost		$2,500,000	$2,500,000
2	1			$2,000.0			2,000,000	1,923,077
3	0						0	0
4	0						0	0
5	0						0	0
6	0						0	0
7	0						0	0
8	0						0	0
Annual Infrastructure O&M Costs								
1					$5		$5,000	$4,623
2					$5		5,000	4,445
3					$5		5,000	4,274
4					$5		5,000	4,110
5					$5		5,000	3,952
6					$5		5,000	3,800
7					$5		5,000	3,653
8					$5		5,000	3,513
9					$5		5,000	3,378
10					$5		5,000	3,248
11					$5		5,000	3,123
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17					$5		5,000	2,468
18					$5		5,000	2,373
19					$5		5,000	2,282
20					$5		5,000	2,194
Total		$0	$500	$4,000	$100	$0	$4,600,000	$4,488,415

ATP REQUESTED FUNDS	
Total	

Project Information

1F) Project Costs – Total Costs

Total Costs

- Calculated automatically
- Include project cost in constant dollars and present value for each year
- Values are in total dollars and not in thousands of dollars like other columns

1F

PROJECT COSTS AND REQUESTED FUNDS (enter in thousands of dollars)

Col. no.

Year	Construction Years	DIRECT PROJECT COSTS						TOTAL COSTS (in dollars)	
		INITIAL COSTS			SUBSEQUENT COSTS				
		Project Support	R / W	Construction	Maint./ Op.	Rehab.		Constant Dollars	Present Value
Infrastructure Program Costs									
1	1		$500.0	$2,000.0	<-- Must enter a cost			$2,500,000	$2,500,000
2	1			$2,000.0				2,000,000	1,923,077
3	0							0	0
4	0							0	0
5	0							0	0
6	0							0	0
7	0							0	0
8	0							0	0
Annual Infrastructure O&M Costs									
1					$5			$5,000	$4,623
2					$5			5,000	4,445
3					$5			5,000	4,274
4					$5			5,000	4,110
5					$5			5,000	3,952
6					$5			5,000	3,800
7					$5			5,000	3,653
8					$5			5,000	3,513
9					$5			5,000	3,378
10					$5			5,000	3,248
11					$5			5,000	3,123
12					$5			5,000	3,003
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15					$5			5,000	2,670
16					$5			5,000	2,567
17					$5			5,000	2,468
18					$5			5,000	2,373
19					$5			5,000	2,282
20					$5			5,000	2,194
Total		$0	$500	$4,000	$100	$0		$4,600,000	$4,488,415

ATP REQUESTED FUNDS	
Total	

Project Information

1G) Program Costs and Requested Funds

Required for non-infrastructure projects

- Cal-B/C AT has an additional section for programmatic or non-infrastructure costs
- Same five cost columns are available to use to enter costs for projects with non-infrastructure improvements
  - Must be entered in thousands of dollars ($1,000)
  - Must be entered in constant dollars, in same year as economic parameters
- Total costs in constant and present value dollars are still calculated
- **ATP Requested Funds**
  - Enter costs requested for the Active Transportation Program
  - Only used if the tool is being used for an ATP application

1G

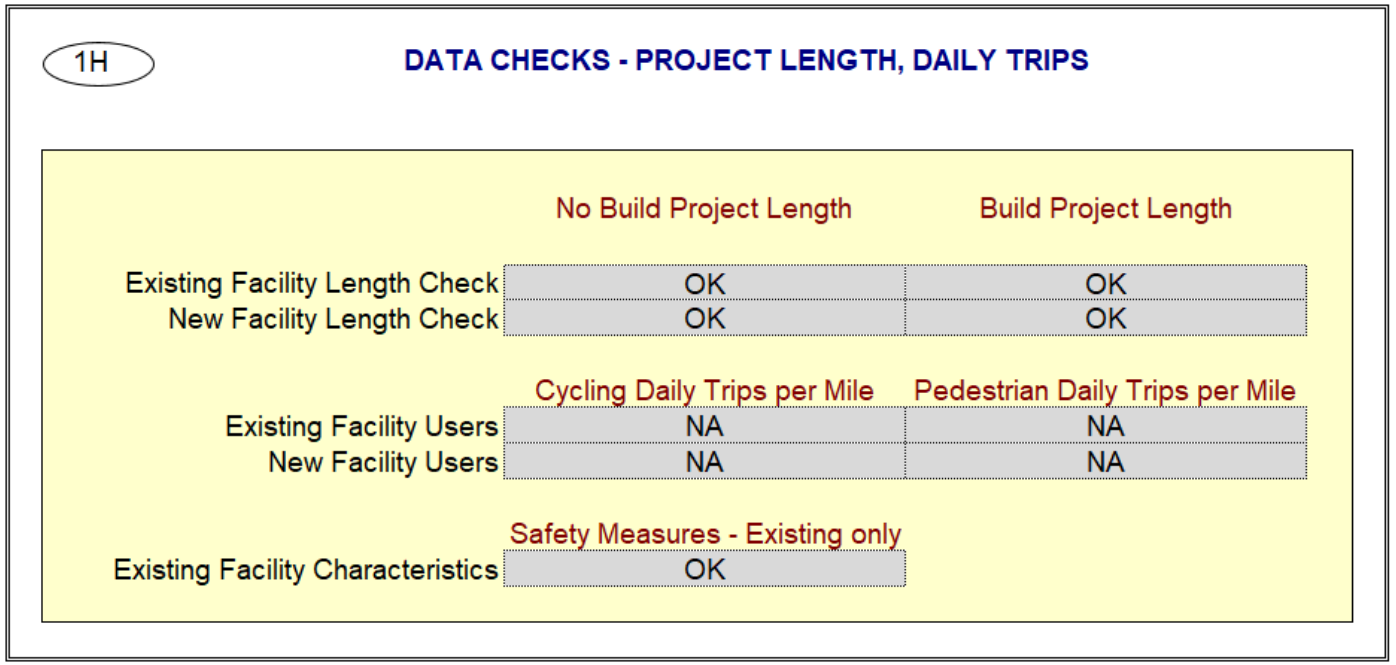
PROGRAM COSTS AND REQUESTED FUNDS (enter in thousands of dollars)

Year	Construction Years	DIRECT PROJECT COSTS						TOTAL COSTS (in dollars)	
		INITIAL COSTS			SUBSEQUENT COSTS				
		Project Support	R / W	Construction	Maint./ Op.	Rehab.		Constant Dollars	Present Value
Non-Infrastructure Program Costs									
1		1			<-- Must enter a cost			$1,000	$1,000
2								0	0
3								0	0
4								0	0
5								0	0
6								0	0
7								0	0
8								0	0
Annual Non-Infrastructure O&M Costs									
1					$5			$5,000	$5,000
2					$5			5,000	4,808
3								0	0
4								0	0
5								0	0
6								0	0
7								0	0
8								0	0
9								0	0
10								0	0
11								0	0
12								0	0
13								0	0
14								0	0
15								0	0
16								0	0
17								0	0
18								0	0
19								0	0
20								0	0
Total		$1	$0	$0	$10	$0		$11,000	$10,808

ATP REQUESTED FUNDS		
Total		

1H) Data Checks – Project Length, Daily Trips

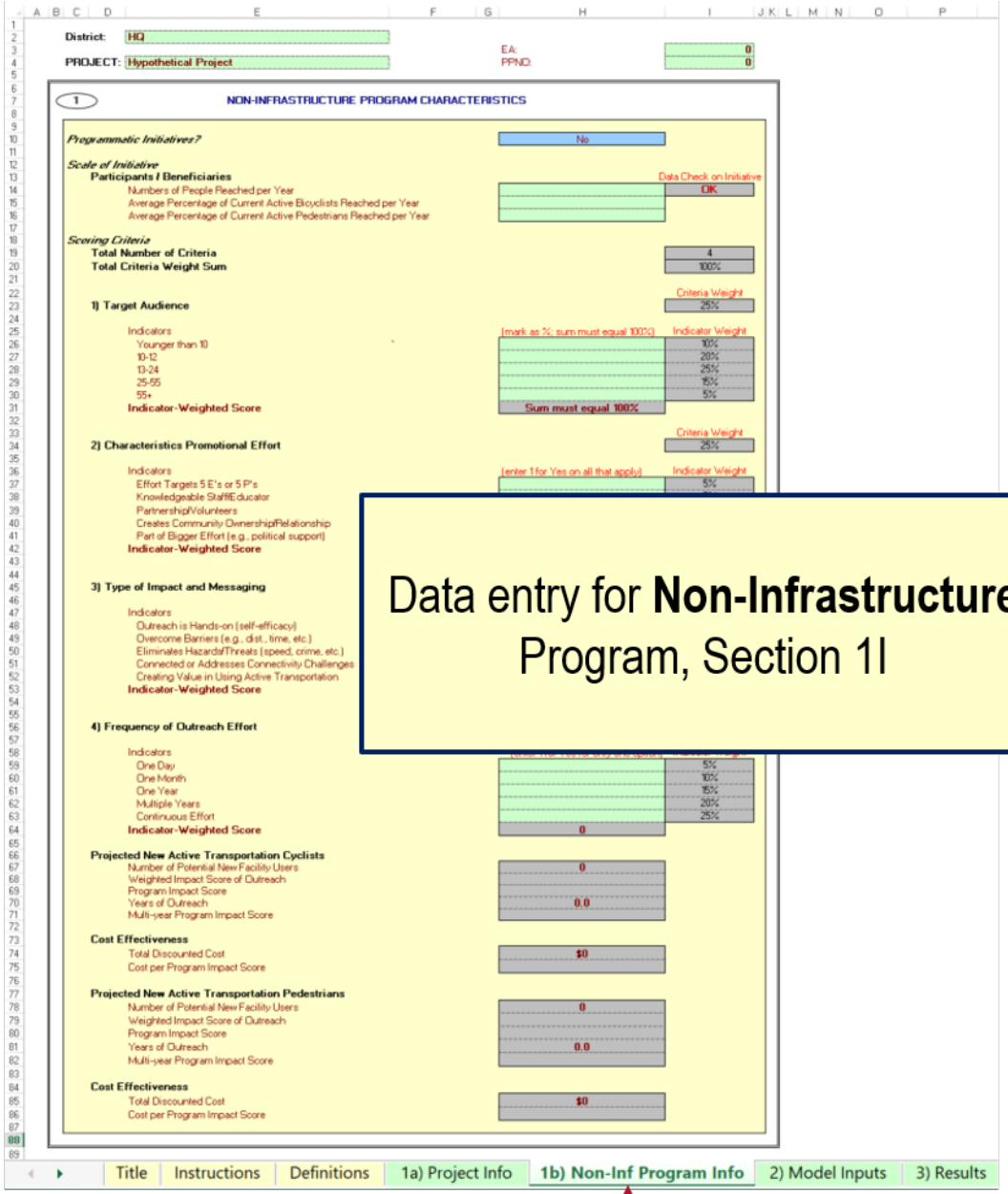
- Checks for data consistency in all sections in 1a) Project Info
  - Facility length: existing and new, in No Build and Build scenarios
  - Facility users (trips per mile): existing and new, bicycles and pedestrians
  - Safety measures on existing facilities
- Confirms that data is entered for the improvements identified



Non-Infrastructure Program Information Worksheet (1b)

Required for non-infrastructure programs

- Data entry and scoring system for non-infrastructure initiatives and programs



Data entry for **Non-Infrastructure** Program, Section 1I

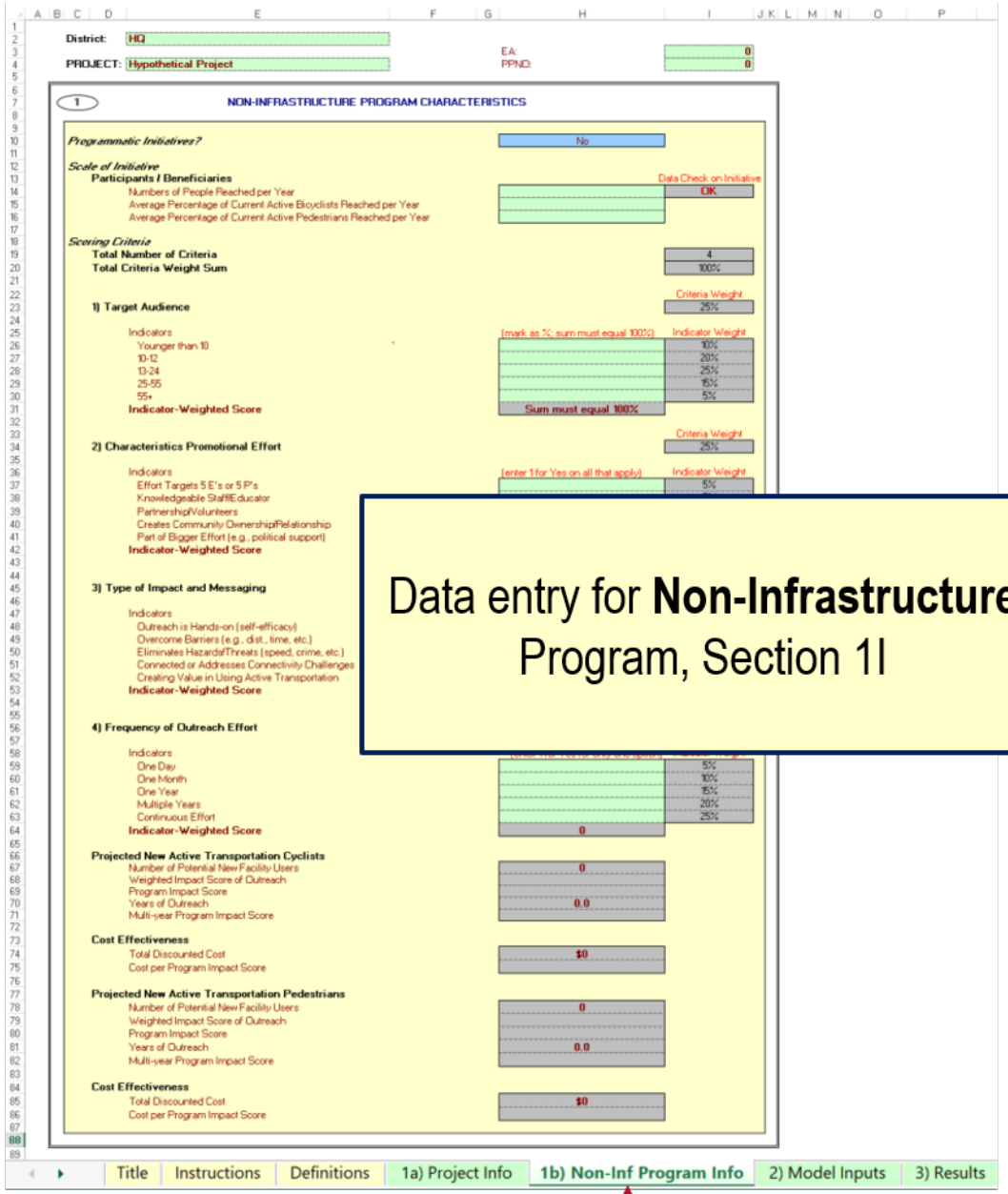
Project Information

1

Title | Instructions | Definitions | 1a) Project Info | 1b) Non-Inf Program Info | 2) Model Inputs | 3) Results

Non-Infrastructure Program Information Worksheet (1b)

- Scoring framework is used to determine the initiative overall cost per score
- Four equally weighted criteria assess the effectiveness of the initiative
- Score is based on how non-active transportation users are impacted



Data entry for **Non-Infrastructure** Program, Section 1I

Project Information

1

Non-Infrastructure Program Information – Data Requirements

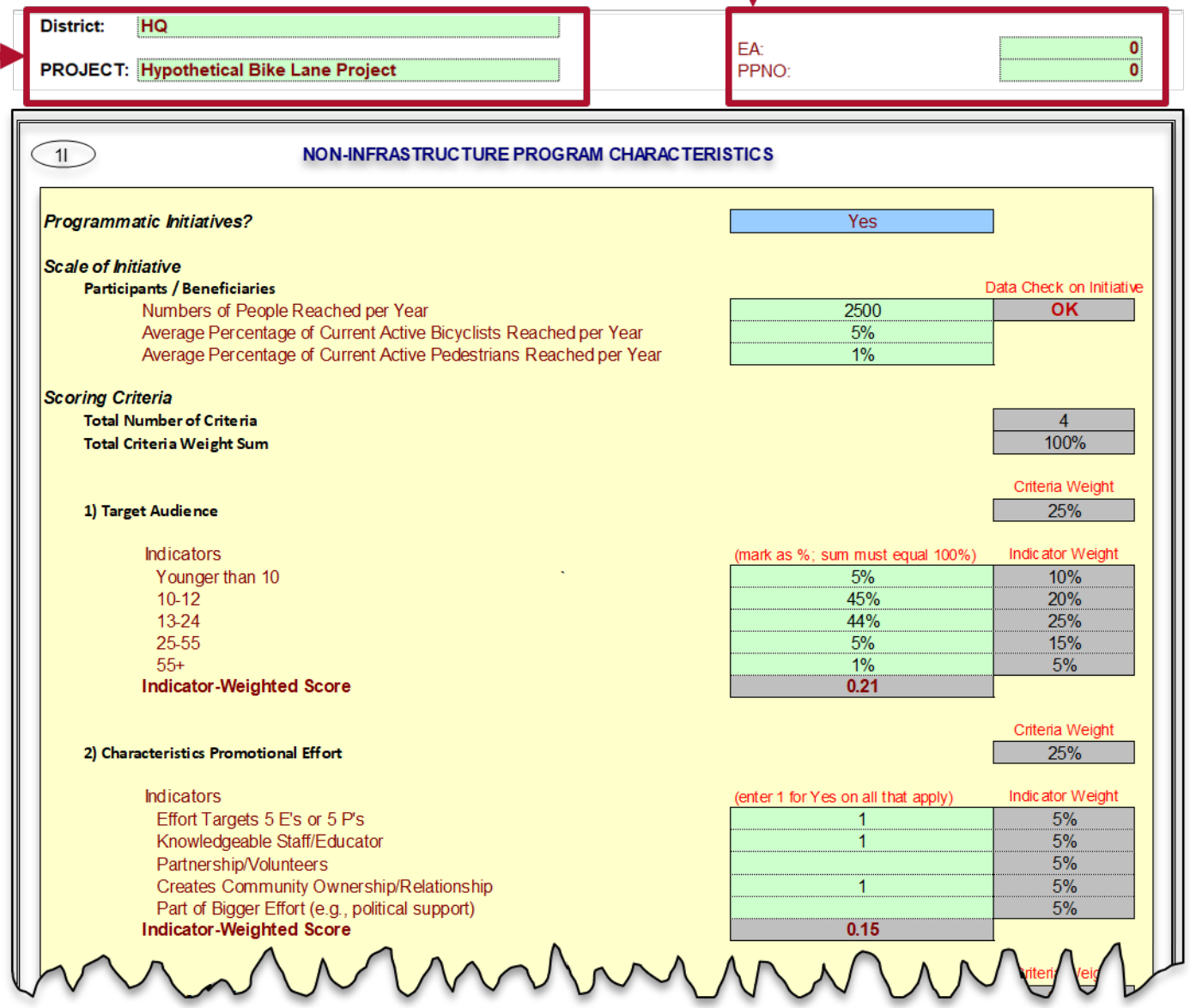
- Scale of Initiative – Number of people reached
- Program Details – target audience, promotional characteristics, type of messaging, and duration

1I) Non-Infrastructure Program Characteristics

- Optional, input unique project identifiers including: Caltrans District, Project Name (w/ route number and post miles), Expenditure Authorization (EA) number, Planning and Programming Number (PPNO)

Pro tip: Include Post Mile, Highway, or State Route Name in Project Name

EA or PPNO only makes sense for Caltrans internal budgeting and programming



District: HQ
PROJECT: Hypothetical Bike Lane Project
EA: 0
PPNO: 0

1I

NON-INFRASTRUCTURE PROGRAM CHARACTERISTICS

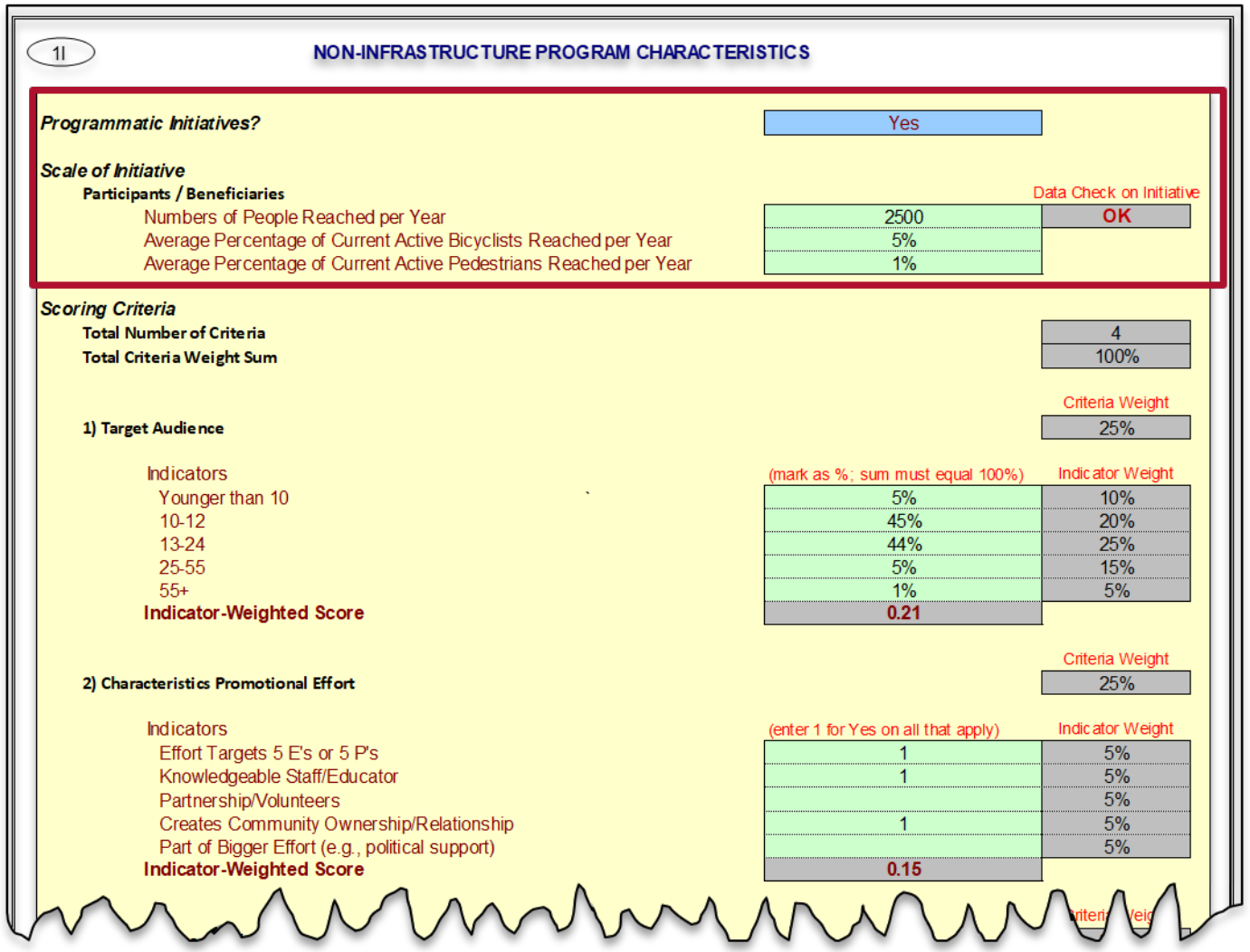
Programmatic Initiatives?	Yes	
Scale of Initiative		
Participants / Beneficiaries		Data Check on Initiative
Numbers of People Reached per Year	2500	OK
Average Percentage of Current Active Bicyclists Reached per Year	5%	
Average Percentage of Current Active Pedestrians Reached per Year	1%	
Scoring Criteria		
Total Number of Criteria		4
Total Criteria Weight Sum		100%
		Criteria Weight
1) Target Audience		25%
Indicators	(mark as %; sum must equal 100%)	Indicator Weight
Younger than 10	5%	10%
10-12	45%	20%
13-24	44%	25%
25-55	5%	15%
55+	1%	5%
Indicator-Weighted Score	0.21	
		Criteria Weight
2) Characteristics Promotional Effort		25%
Indicators	(enter 1 for Yes on all that apply)	Indicator Weight
Effort Targets 5 E's or 5 P's	1	5%
Knowledgeable Staff/Educator	1	5%
Partnership/Volunteers		5%
Creates Community Ownership/Relationship	1	5%
Part of Bigger Effort (e.g., political support)		5%
Indicator-Weighted Score	0.15	

1I) Non-Infrastructure Program Characteristics

- Programmatic Initiatives (based on selection in Section 1A)

Participants/Beneficiaries

- **Number of People reached per year**
- **Percentage of Current Active Bicyclists that benefit (are reached by the program)**
- **Percentage of Current Active Pedestrians that benefit (are reached by the program)**



1I

NON-INFRASTRUCTURE PROGRAM CHARACTERISTICS

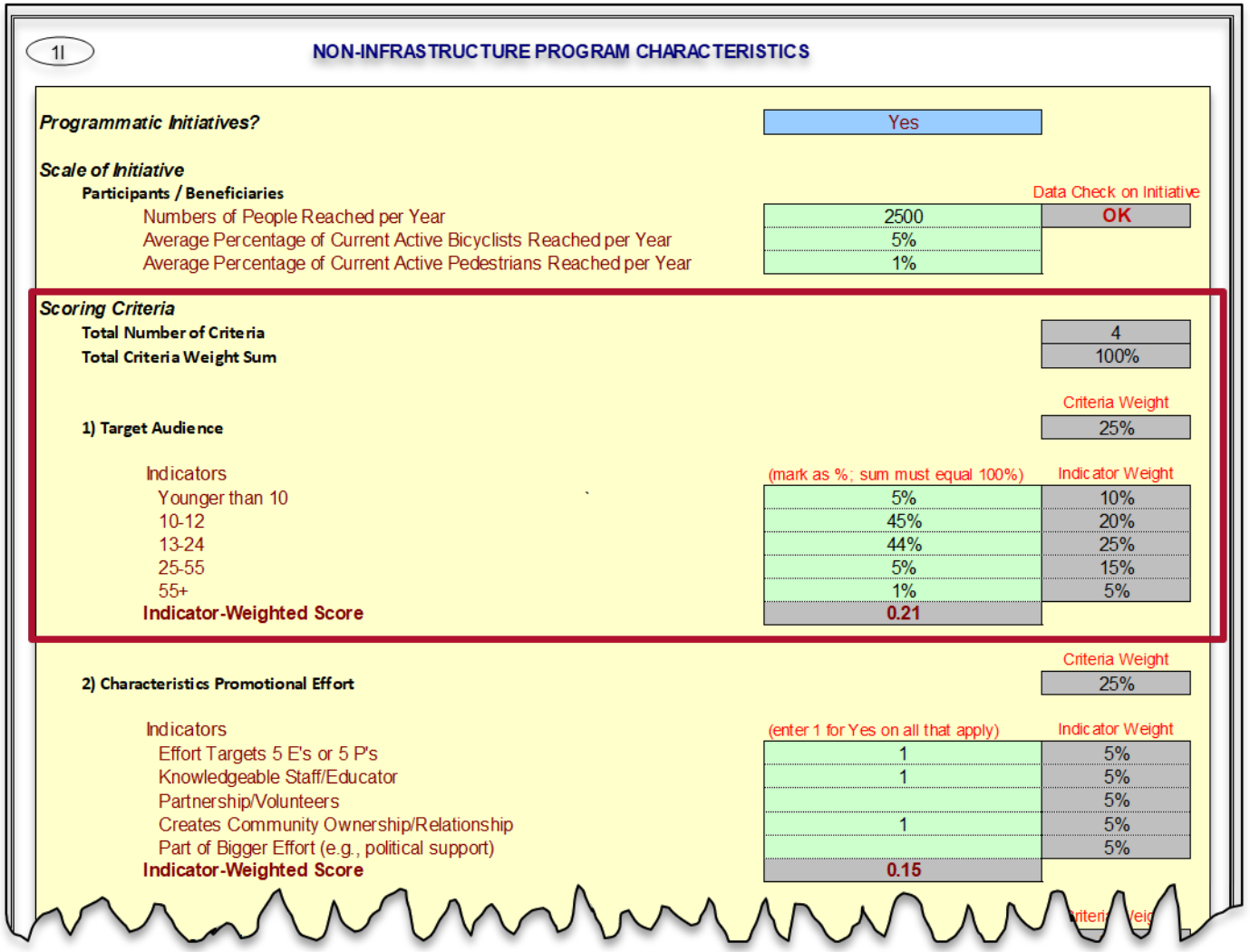
Programmatic Initiatives?	Yes	
Scale of Initiative		
Participants / Beneficiaries		Data Check on Initiative
Numbers of People Reached per Year	2500	OK
Average Percentage of Current Active Bicyclists Reached per Year	5%	
Average Percentage of Current Active Pedestrians Reached per Year	1%	
Scoring Criteria		
Total Number of Criteria		4
Total Criteria Weight Sum		100%
		Criteria Weight
1) Target Audience		25%
Indicators	(mark as %; sum must equal 100%)	Indicator Weight
Younger than 10	5%	10%
10-12	45%	20%
13-24	44%	25%
25-55	5%	15%
55+	1%	5%
Indicator-Weighted Score	0.21	
		Criteria Weight
2) Characteristics Promotional Effort		25%
Indicators	(enter 1 for Yes on all that apply)	Indicator Weight
Effort Targets 5 E's or 5 P's	1	5%
Knowledgeable Staff/Educator	1	5%
Partnership/Volunteers		5%
Creates Community Ownership/Relationship	1	5%
Part of Bigger Effort (e.g., political support)		5%
Indicator-Weighted Score	0.15	

Project Information

1I) Non-Infrastructure Program Characteristics

Scoring Criteria

- 1) Target Audience
  - Distribution in percentages by age group
  - Gray cells are used in the calculation of the Indicator-Weighted Score, they are not intended to be overridden



1I

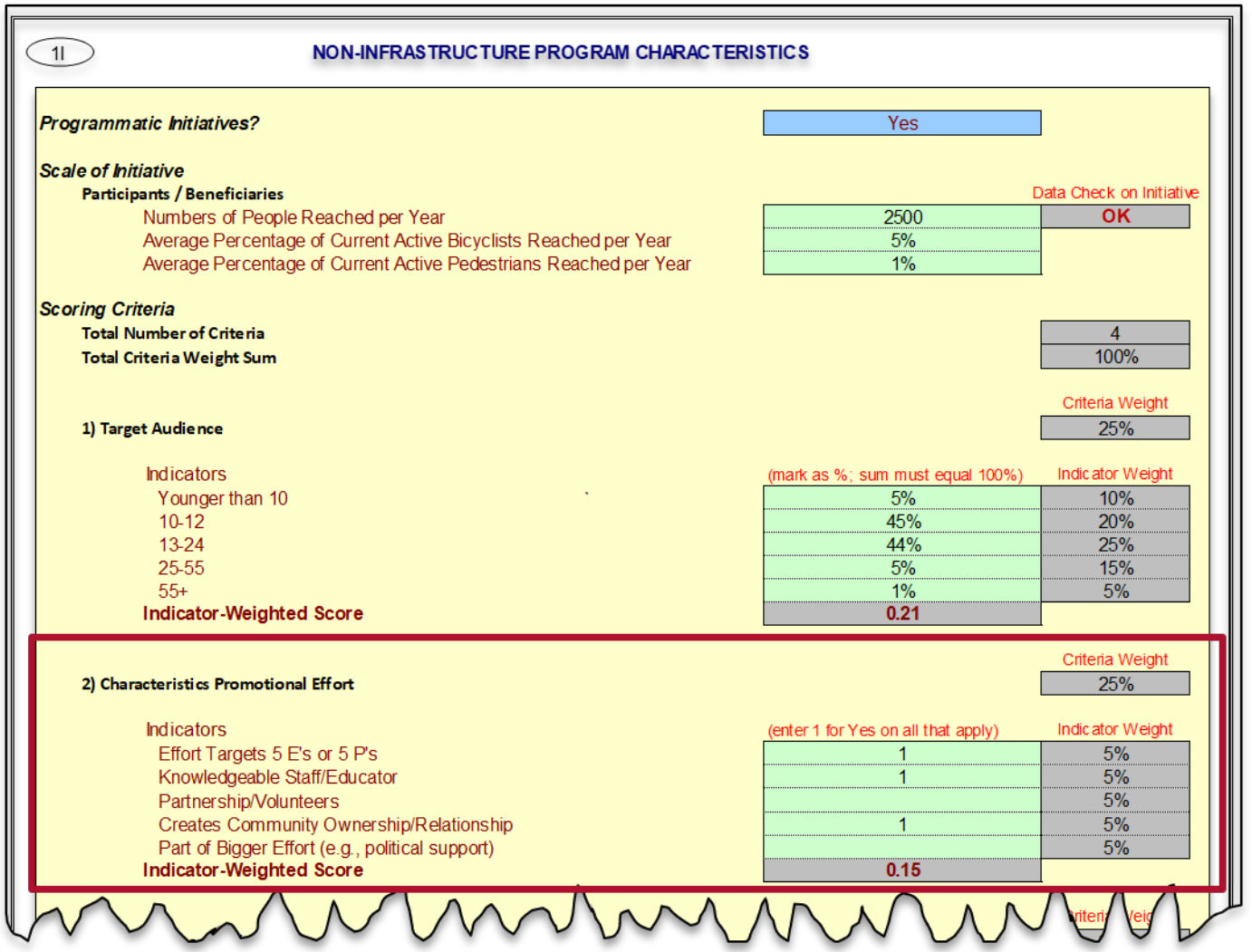
NON-INFRASTRUCTURE PROGRAM CHARACTERISTICS

Programmatic Initiatives?	Yes	
Scale of Initiative		
Participants / Beneficiaries		Data Check on Initiative
Numbers of People Reached per Year	2500	OK
Average Percentage of Current Active Bicyclists Reached per Year	5%	
Average Percentage of Current Active Pedestrians Reached per Year	1%	
Scoring Criteria		
Total Number of Criteria		4
Total Criteria Weight Sum		100%
		Criteria Weight
1) Target Audience		25%
Indicators	(mark as %; sum must equal 100%)	Indicator Weight
Younger than 10	5%	10%
10-12	45%	20%
13-24	44%	25%
25-55	5%	15%
55+	1%	5%
Indicator-Weighted Score	0.21	
		Criteria Weight
2) Characteristics Promotional Effort		25%
Indicators	(enter 1 for Yes on all that apply)	Indicator Weight
Effort Targets 5 E's or 5 P's	1	5%
Knowledgeable Staff/Educator	1	5%
Partnership/Volunteers		5%
Creates Community Ownership/Relationship	1	5%
Part of Bigger Effort (e.g., political support)		5%
Indicator-Weighted Score	0.15	

1I) Non-Infrastructure Program Characteristics

Scoring Criteria

- 2) Characteristics Promotional Effort
  - Effort Targets 5 e's or 5 p's
    - **E**ducation, **e**nforcement, **e**ncouragement, **e**ngineering, **e**valuation
    - **P**reparation, **p**romotion, **p**rograms, **p**olicy, **p**hysical **p**rojects
  - Knowledgeable Staff/Educator
  - Partnership/Volunteers
  - Creates Community Ownership
  - Part of Bigger Effort
- Mark '1' for all that apply



1I

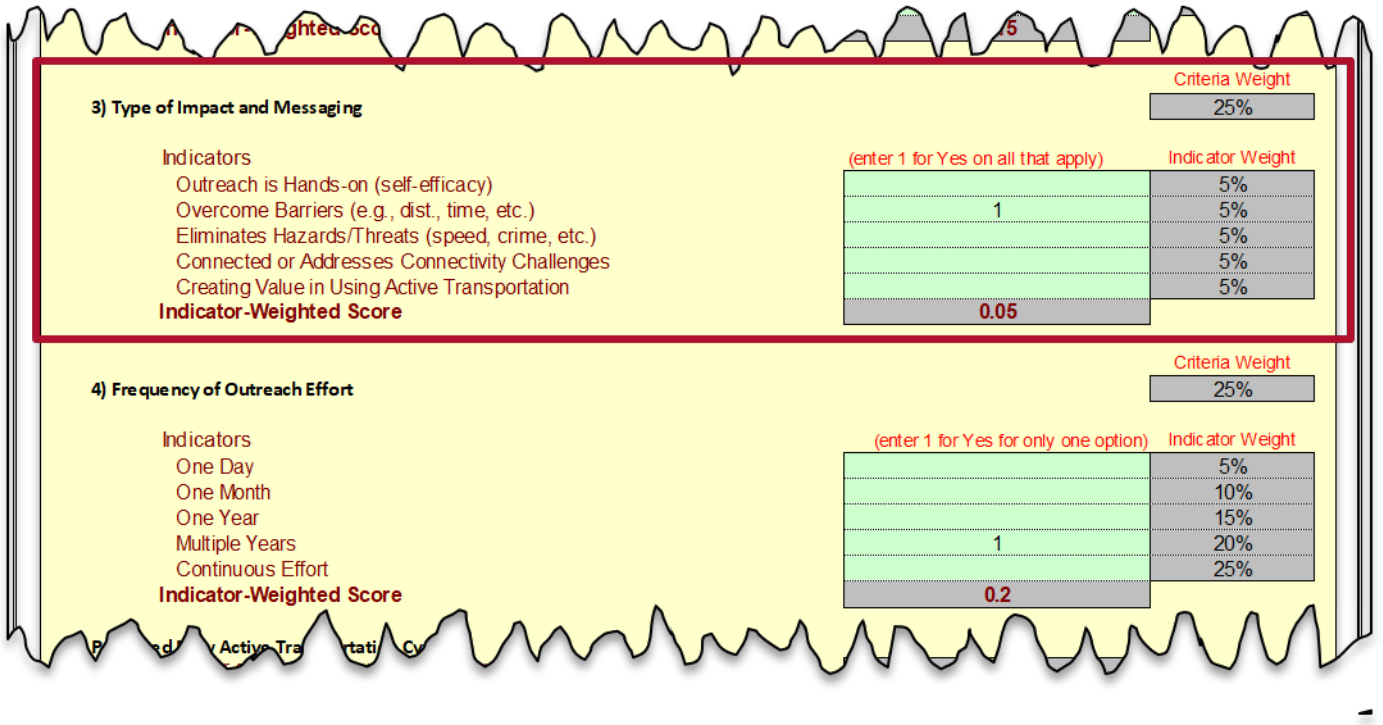
NON-INFRASTRUCTURE PROGRAM CHARACTERISTICS

Programmatic Initiatives?	Yes	
Scale of Initiative		
Participants / Beneficiaries		Data Check on Initiative
Numbers of People Reached per Year	2500	OK
Average Percentage of Current Active Bicyclists Reached per Year	5%	
Average Percentage of Current Active Pedestrians Reached per Year	1%	
Scoring Criteria		
Total Number of Criteria		4
Total Criteria Weight Sum		100%
		Criteria Weight
1) Target Audience		25%
Indicators	(mark as %; sum must equal 100%)	Indicator Weight
Younger than 10	5%	10%
10-12	45%	20%
13-24	44%	25%
25-55	5%	15%
55+	1%	5%
Indicator-Weighted Score	0.21	
		Criteria Weight
2) Characteristics Promotional Effort		25%
Indicators	(enter 1 for Yes on all that apply)	Indicator Weight
Effort Targets 5 E's or 5 P's	1	5%
Knowledgeable Staff/Educator	1	5%
Partnership/Volunteers		5%
Creates Community Ownership/Relationship	1	5%
Part of Bigger Effort (e.g., political support)		5%
Indicator-Weighted Score	0.15	

1I) Non-Infrastructure Program Characteristics

Scoring Criteria

- 3) Type of Impact and Messaging
  - Hands-on Outreach
  - Overcome Barriers
  - Eliminates Hazards/Threats
  - Connected or Addresses Connectivity Challenges
  - Creating Value in Using Active Transportation
- Mark '1' for all that apply



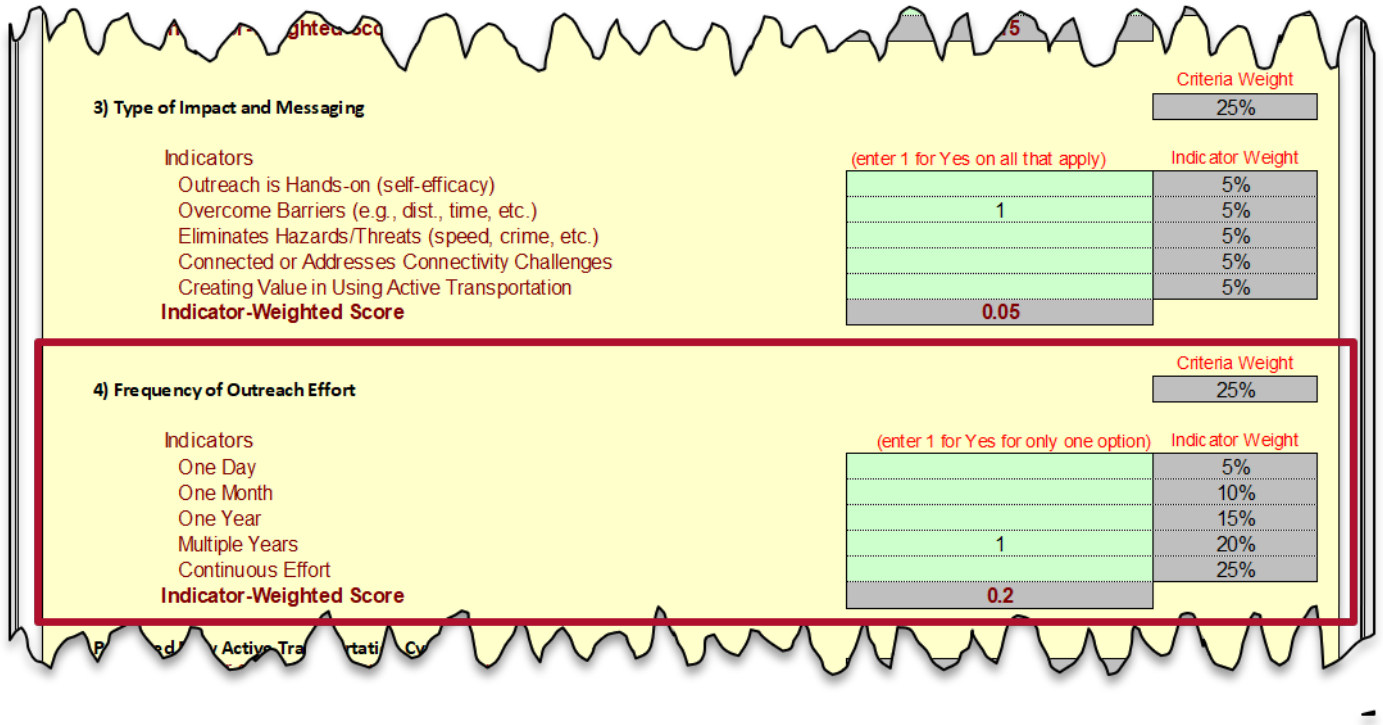
3) Type of Impact and Messaging	(enter 1 for Yes on all that apply)	Criteria Weight / Indicator Weight
		Criteria Weight: 25%
Indicators		
Outreach is Hands-on (self-efficacy)		5%
Overcome Barriers (e.g., dist., time, etc.)	1	5%
Eliminates Hazards/Threats (speed, crime, etc.)		5%
Connected or Addresses Connectivity Challenges		5%
Creating Value in Using Active Transportation		5%
Indicator-Weighted Score	**0.05**	

4) Frequency of Outreach Effort	(enter 1 for Yes for only one option)	Criteria Weight / Indicator Weight
		Criteria Weight: 25%
Indicators		
One Day		5%
One Month		10%
One Year		15%
Multiple Years	1	20%
Continuous Effort		25%
Indicator-Weighted Score	**0.2**	

1I) Non-Infrastructure Program Characteristics

Scoring Criteria

- 4) Frequency of Outreach Effort
  - One Day
  - One Month
  - One Year
  - Multiple Years
  - Continuous Effort
- Mark '1' for the option that applies (mutually exclusive options)



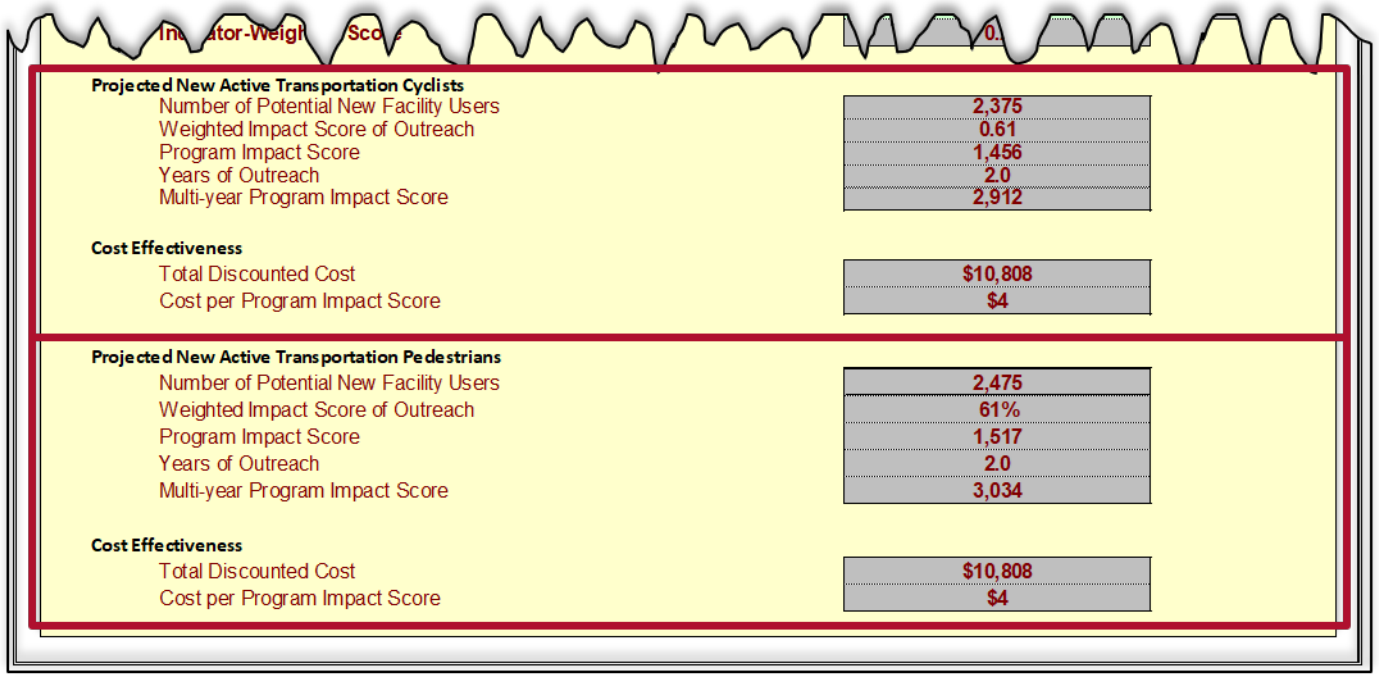
3) Type of Impact and Messaging		Criteria Weight 25%
Indicators	(enter 1 for Yes on all that apply)	Indicator Weight
Outreach is Hands-on (self-efficacy)		5%
Overcome Barriers (e.g., dist., time, etc.)	1	5%
Eliminates Hazards/Threats (speed, crime, etc.)		5%
Connected or Addresses Connectivity Challenges		5%
Creating Value in Using Active Transportation		5%
Indicator-Weighted Score	0.05	

4) Frequency of Outreach Effort		Criteria Weight 25%
Indicators	(enter 1 for Yes for only one option)	Indicator Weight
One Day		5%
One Month		10%
One Year		15%
Multiple Years	1	20%
Continuous Effort		25%
Indicator-Weighted Score	0.2	

1I) Non-Infrastructure Program Characteristics

Scoring Criteria – Calculated fields

- **Projected New Active Transportation Cyclists**
  - Number of potential new facility users
  - Years of outreach
  - Impact Scores
- **Cost Effectiveness (for Cyclists)**
  - Total Discounted Cost
  - Cost per Program Impact Score
- **Projected New Active Transportation Pedestrians**
  - Number of potential new facility users
  - Years of outreach
  - Impact Scores
- **Cost Effectiveness (for Pedestrians)**
  - Total Discounted Cost
  - Cost per Program Impact Score



03

Step 2, Adjust Model Data

Model Inputs – Data Requirements

- Travel Demand Data – Number of trips, users, and miles traveled by trip purpose by mode

2) Model Inputs, Sections

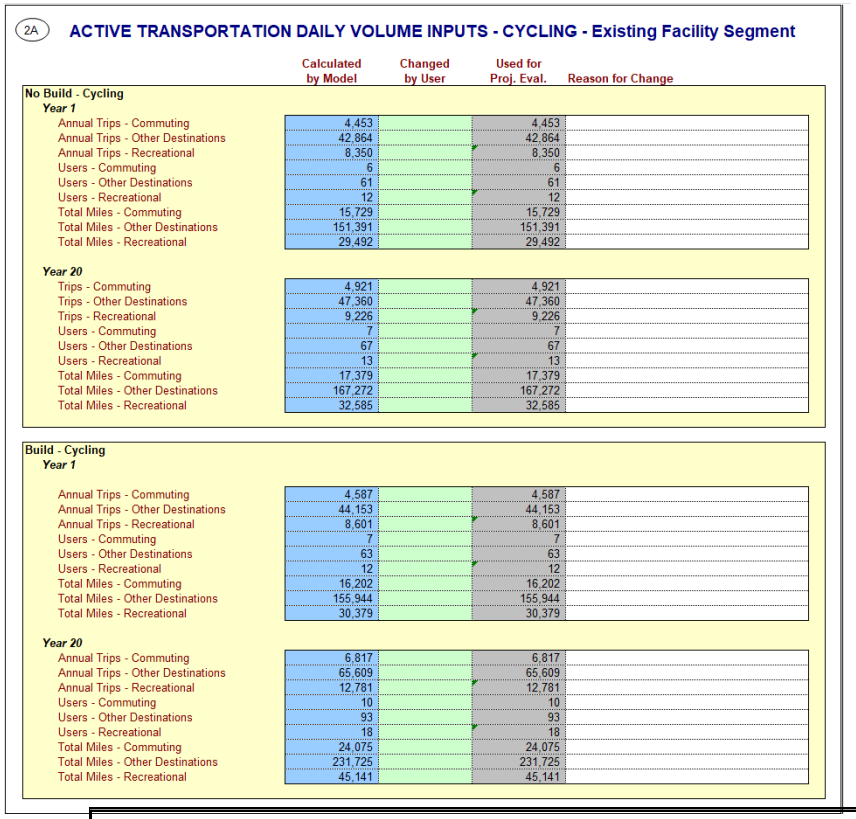
Optional inputs to overwrite Cal-B/C model calculations

Cycling Volume Inputs

- 2A) Existing Facility Segment
- 2B) New Facility Segment
- 2C) New Safe Routes To School
- 2D) Existing Safe Routes To School

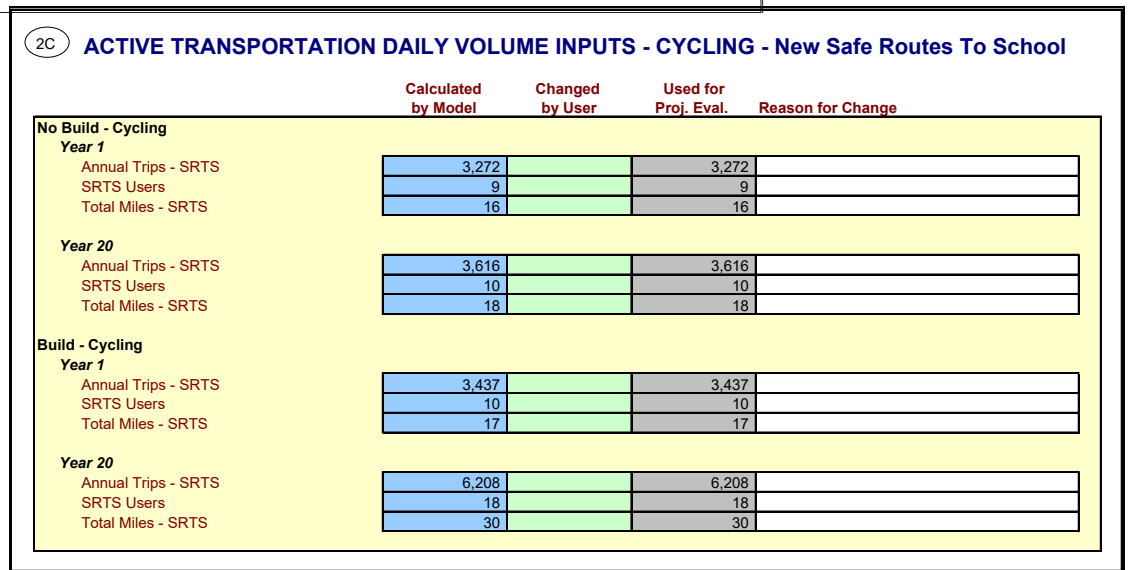
Pedestrian Volume Inputs

- 2E) Existing Facility Segment
- 2F) New Facility Segment
- 2G) New Safe Routes To School
- 2H) Existing Safe Routes To School



2A ACTIVE TRANSPORTATION DAILY VOLUME INPUTS - CYCLING - Existing Facility Segment

	Calculated by Model	Changed by User	Used for Proj. Eval.	Reason for Change
No Build - Cycling				
Year 1				
Annual Trips - Commuting	4,453		4,453	
Annual Trips - Other Destinations	42,864		42,864	
Annual Trips - Recreational	8,350		8,350	
Users - Commuting	6		6	
Users - Other Destinations	61		61	
Users - Recreational	12		12	
Total Miles - Commuting	15,729		15,729	
Total Miles - Other Destinations	151,391		151,391	
Total Miles - Recreational	29,492		29,492	
Year 20				
Trips - Commuting	4,921		4,921	
Trips - Other Destinations	47,360		47,360	
Trips - Recreational	9,226		9,226	
Users - Commuting	7		7	
Users - Other Destinations	67		67	
Users - Recreational	13		13	
Total Miles - Commuting	17,379		17,379	
Total Miles - Other Destinations	167,272		167,272	
Total Miles - Recreational	32,585		32,585	
Build - Cycling				
Year 1				
Annual Trips - Commuting	4,587		4,587	
Annual Trips - Other Destinations	44,153		44,153	
Annual Trips - Recreational	8,601		8,601	
Users - Commuting	7		7	
Users - Other Destinations	63		63	
Users - Recreational	12		12	
Total Miles - Commuting	16,202		16,202	
Total Miles - Other Destinations	155,944		155,944	
Total Miles - Recreational	30,379		30,379	
Year 20				
Annual Trips - Commuting	6,817		6,817	
Annual Trips - Other Destinations	65,609		65,609	
Annual Trips - Recreational	12,781		12,781	
Users - Commuting	10		10	
Users - Other Destinations	93		93	
Users - Recreational	18		18	
Total Miles - Commuting	24,075		24,075	
Total Miles - Other Destinations	231,725		231,725	
Total Miles - Recreational	45,141		45,141	



2C ACTIVE TRANSPORTATION DAILY VOLUME INPUTS - CYCLING - New Safe Routes To School

	Calculated by Model	Changed by User	Used for Proj. Eval.	Reason for Change
No Build - Cycling				
Year 1				
Annual Trips - SRTS	3,272		3,272	
SRTS Users	9		9	
Total Miles - SRTS	16		16	
Year 20				
Annual Trips - SRTS	3,616		3,616	
SRTS Users	10		10	
Total Miles - SRTS	18		18	
Build - Cycling				
Year 1				
Annual Trips - SRTS	3,437		3,437	
SRTS Users	10		10	
Total Miles - SRTS	17		17	
Year 20				
Annual Trips - SRTS	6,208		6,208	
SRTS Users	18		18	
Total Miles - SRTS	30		30	

2) Model Inputs, Volumes

Same input form:

Cycling Volume Inputs

- 2A) Existing Facility Segment
- 2B) New Facility Segment

Pedestrian Volume Inputs

- 2E) Existing Facility Segment
- 2F) New Facility Segment

2A **ACTIVE TRANSPORTATION DAILY VOLUME INPUTS - CYCLING - Existing Facility Segment**

	Calculated by Model	Changed by User	Used for Proj. Eval.	Reason for Change
No Build - Cycling				
Year 1				
Annual Trips - Commuting	4,453		4,453	
Annual Trips - Other Destinations	42,864		42,864	
Annual Trips - Recreational	8,350		8,350	
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Total Miles - Commuting	15,729		15,729	
Total Miles - Other Destinations	151,391		151,391	
Total Miles - Recreational	29,492		29,492	
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Trips - Commuting	4,921		4,921	
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Total Miles - Commuting	24,075		24,075	
Total Miles - Other Destinations	231,725		231,725	
Total Miles - Recreational	45,141		45,141	

2) Model Inputs, Volumes

- Adjust calculated values if more in-depth data are available
- Number of **trips, users, and miles traveled** by trip purpose
- Estimated based on data entered in Project Information worksheet
- Both Year 1 and Year 20 estimates
- No Build and Build scenarios
- Considers commuting, recreation and other destinations for purpose of travel

2A **ACTIVE TRANSPORTATION DAILY VOLUME INPUTS - CYCLING - Existing Facility Segment**

	Calculated by Model	Changed by User	Used for Proj. Eval.	Reason for Change
No Build - Cycling				
Year 1				
Annual Trips - Commuting	4,453		4,453	
Annual Trips - Other Destinations	42,864		42,864	
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Total Miles - Commuting	24,075		24,075	
Total Miles - Other Destinations	231,725		231,725	
Total Miles - Recreational	45,141		45,141	

Safe Routes To School, Sections

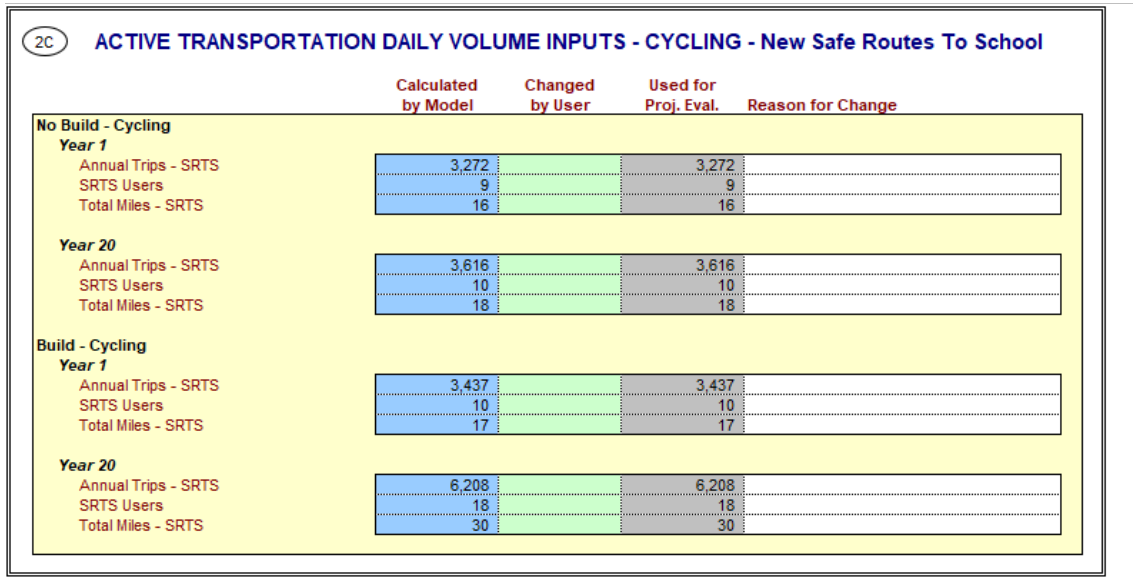
Same input form:

Pedestrian Daily Volume Inputs

- 2C) New Safe Routes To School
- 2D) Existing Safe Routes To School

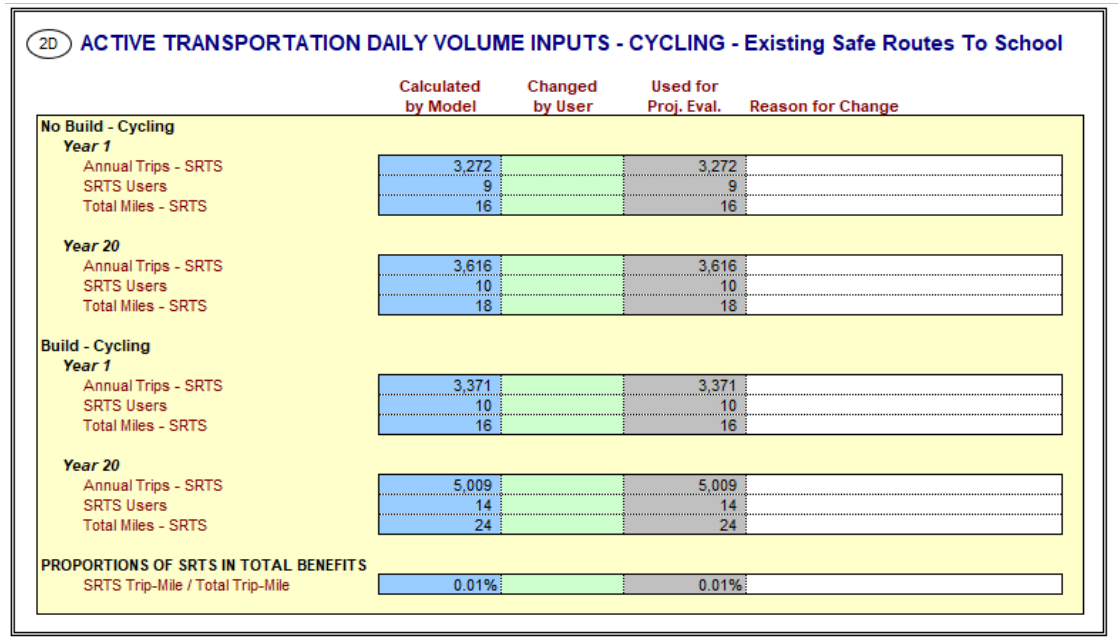
Cycling Volume Inputs

- 2G) New Safe Routes To School
- 2H) Existing Safe Routes To School



2C ACTIVE TRANSPORTATION DAILY VOLUME INPUTS - CYCLING - New Safe Routes To School

	Calculated by Model	Changed by User	Used for Proj. Eval.	Reason for Change
No Build - Cycling				
Year 1				
Annual Trips - SRTS	3,272		3,272	
SRTS Users	9		9	
Total Miles - SRTS	16		16	
Year 20				
Annual Trips - SRTS	3,616		3,616	
SRTS Users	10		10	
Total Miles - SRTS	18		18	
Build - Cycling				
Year 1				
Annual Trips - SRTS	3,437		3,437	
SRTS Users	10		10	
Total Miles - SRTS	17		17	
Year 20				
Annual Trips - SRTS	6,208		6,208	
SRTS Users	18		18	
Total Miles - SRTS	30		30	



2D ACTIVE TRANSPORTATION DAILY VOLUME INPUTS - CYCLING - Existing Safe Routes To School

	Calculated by Model	Changed by User	Used for Proj. Eval.	Reason for Change
No Build - Cycling				
Year 1				
Annual Trips - SRTS	3,272		3,272	
SRTS Users	9		9	
Total Miles - SRTS	16		16	
Year 20				
Annual Trips - SRTS	3,616		3,616	
SRTS Users	10		10	
Total Miles - SRTS	18		18	
Build - Cycling				
Year 1				
Annual Trips - SRTS	3,371		3,371	
SRTS Users	10		10	
Total Miles - SRTS	16		16	
Year 20				
Annual Trips - SRTS	5,009		5,009	
SRTS Users	14		14	
Total Miles - SRTS	24		24	
PROPORTIONS OF SRTS IN TOTAL BENEFITS				
SRTS Trip-Mile / Total Trip-Mile	0.01%		0.01%	

Safe Routes To School, Volumes

- Allows you to change data for the new and existing facility in the green columns
  - Trips
  - Users
  - Total miles
- Both Year 1 and Year 20 estimates
- No Build and Build scenarios

2C ACTIVE TRANSPORTATION DAILY VOLUME INPUTS - CYCLING - New Safe Routes To School

	Calculated by Model	Changed by User	Used for Proj. Eval.	Reason for Change
No Build - Cycling				
Year 1				
Annual Trips - SRTS	3,272		3,272	
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Year 1				
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Annual Trips - SRTS	6,208		6,208	
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2D ACTIVE TRANSPORTATION DAILY VOLUME INPUTS - CYCLING - Existing Safe Routes To School

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SRTS Users	10		10	
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Annual Trips - SRTS	5,009		5,009	
SRTS Users	14		14	
Total Miles - SRTS	24		24	
PROPORTIONS OF SRTS IN TOTAL BENEFITS				
SRTS Trip-Mile / Total Trip-Mile	0.01%		0.01%	

04

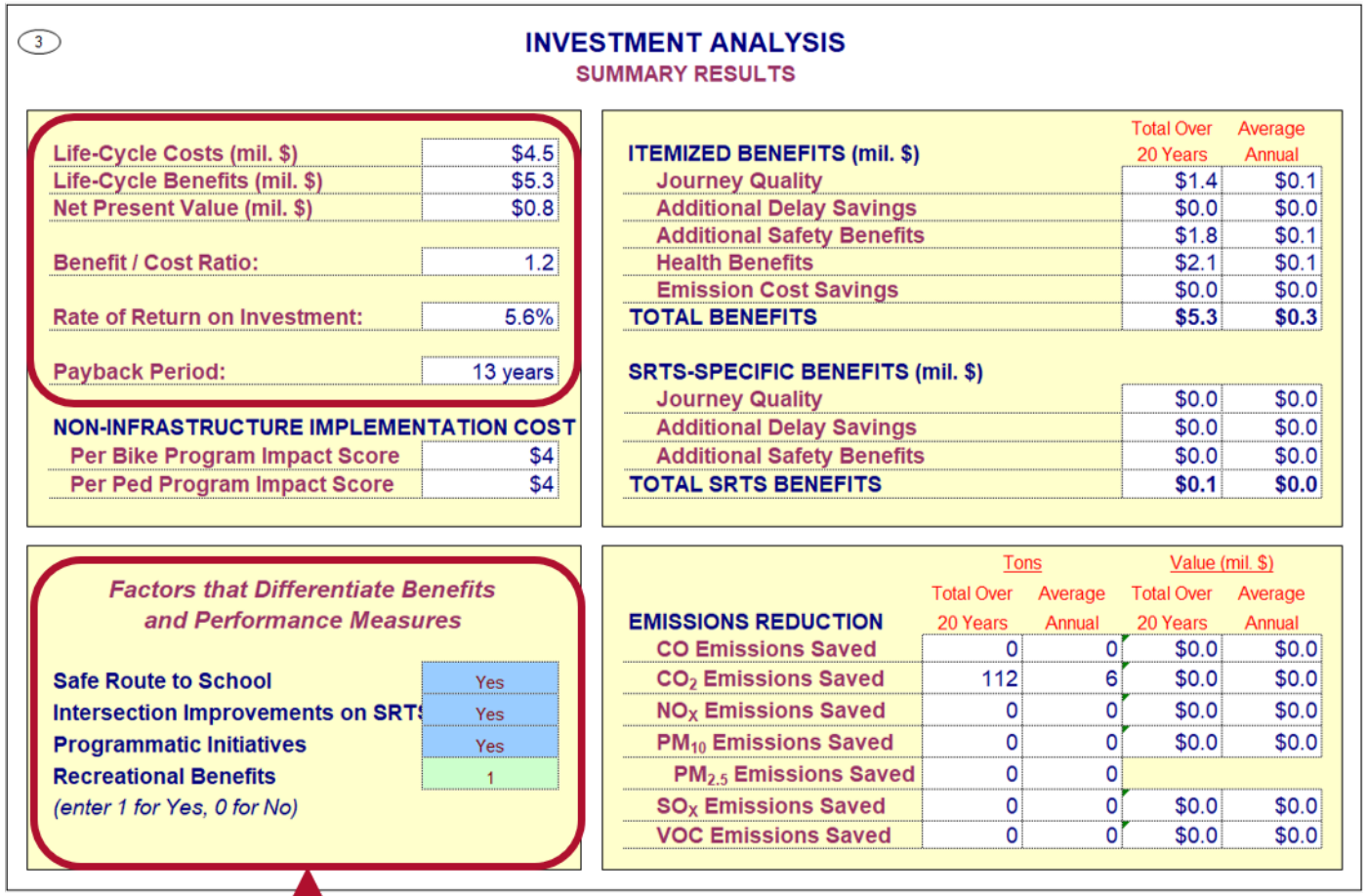
Step 3, Review Summary Results

Review Model Results

Review BCA metrics

- Life-Cycle Costs: present values of all net project costs
- Life-Cycle Benefits: sum of the monetized benefits for the project in present value
- Net Present Value = Life-Cycle Benefits – Life-Cycle Costs
- Benefit/Cost Ratio = Life-Cycle Benefits/Life-Cycle Costs
- Rate of Return on Investment: Discount rate at which benefits and costs are equal
- Payback Period: number of years it takes for the net benefits to equal the initial construction costs

Adjust which benefits are included in the analysis based on the purpose



3

INVESTMENT ANALYSIS
SUMMARY RESULTS

Life-Cycle Costs (mil. $)	$4.5
Life-Cycle Benefits (mil. $)	$5.3
Net Present Value (mil. $)	$0.8
Benefit / Cost Ratio:	1.2
Rate of Return on Investment:	5.6%
Payback Period:	13 years

NON-INFRASTRUCTURE IMPLEMENTATION COST	
Per Bike Program Impact Score	$4
Per Ped Program Impact Score	$4

ITEMIZED BENEFITS (mil. $)	Total Over 20 Years	Average Annual
Journey Quality	$1.4	$0.1
Additional Delay Savings	$0.0	$0.0
Additional Safety Benefits	$1.8	$0.1
Health Benefits	$2.1	$0.1
Emission Cost Savings	$0.0	$0.0
TOTAL BENEFITS	$5.3	$0.3
SRTS-SPECIFIC BENEFITS (mil. $)		
Journey Quality	$0.0	$0.0
Additional Delay Savings	$0.0	$0.0
Additional Safety Benefits	$0.0	$0.0
TOTAL SRTS BENEFITS	$0.1	$0.0

Factors that Differentiate Benefits and Performance Measures

Safe Route to School	Yes
Intersection Improvements on SRTS	Yes
Programmatic Initiatives	Yes
Recreational Benefits	1

(enter 1 for Yes, 0 for No)

EMISSIONS REDUCTION	Tons: Total Over 20 Years	Tons: Average Annual	Value (mil. $): Total Over 20 Years	Value (mil. $): Average Annual
CO Emissions Saved	0	0	$0.0	$0.0
CO_2 Emissions Saved	112	6	$0.0	$0.0
NO_X Emissions Saved	0	0	$0.0	$0.0
PM_{10} Emissions Saved	0	0	$0.0	$0.0
$PM_{2.5}$ Emissions Saved	0	0		
SO_X Emissions Saved	0	0	$0.0	$0.0
VOC Emissions Saved	0	0	$0.0	$0.0

Review Model Results (cont.)

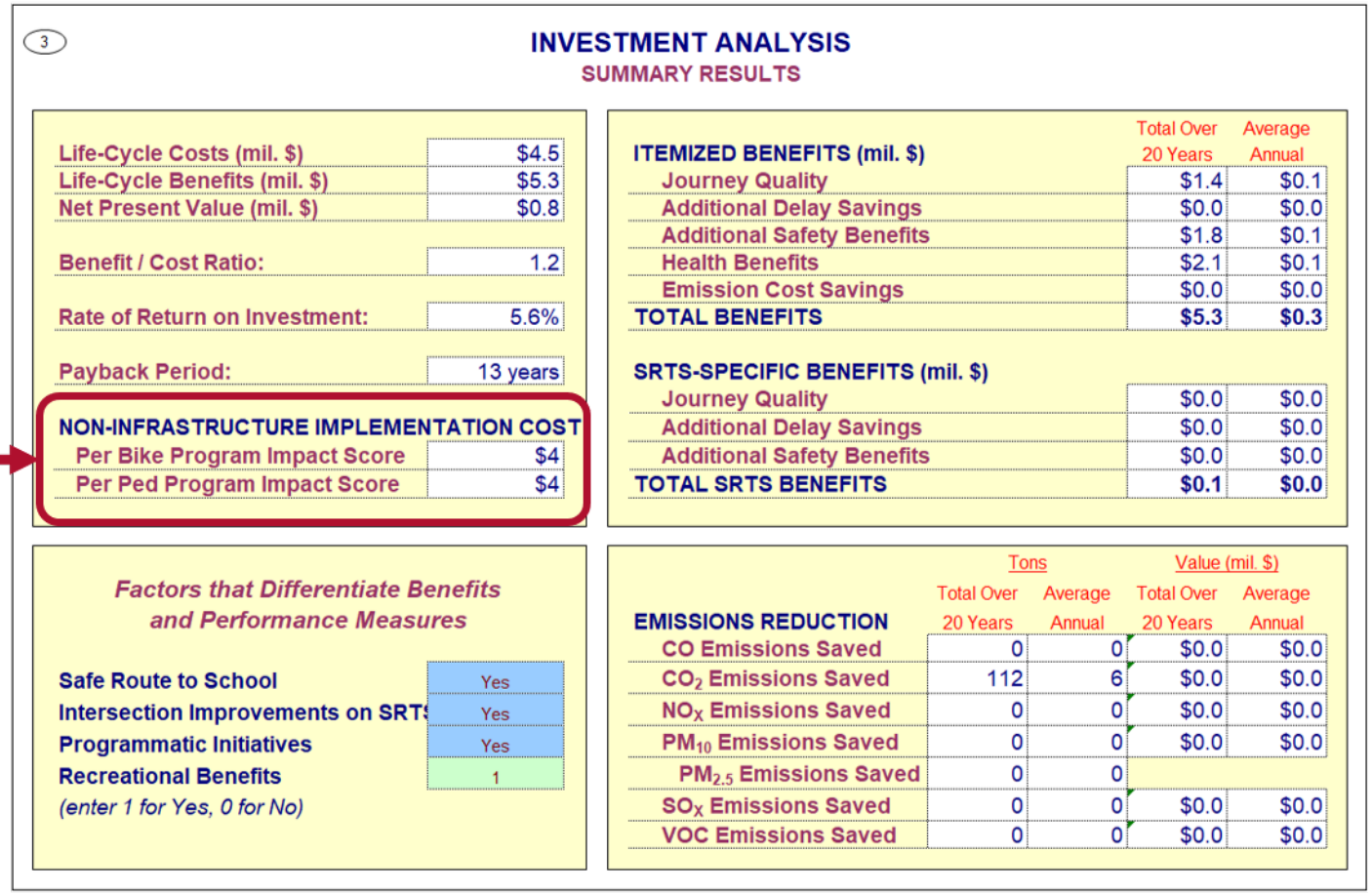
Non-Infrastructure Program

- Cost per Bike Program Impact Score
- Cost per Ped Program Impact Score

Itemized Benefits

SRTS-Specific Benefits

- Included in Itemized Benefits



3

INVESTMENT ANALYSIS
SUMMARY RESULTS

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Payback Period:	13 years
NON-INFRASTRUCTURE IMPLEMENTATION COST	
Per Bike Program Impact Score	$4
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ITEMIZED BENEFITS (mil. $)	Total Over 20 Years	Average Annual
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TOTAL BENEFITS	**$5.3**	**$0.3**
SRTS-SPECIFIC BENEFITS (mil. $)		
Journey Quality	$0.0	$0.0
Additional Delay Savings	$0.0	$0.0
Additional Safety Benefits	$0.0	$0.0
TOTAL SRTS BENEFITS	**$0.1**	**$0.0**

Factors that Differentiate Benefits and Performance Measures

Safe Route to School	Yes
Intersection Improvements on SRTS	Yes
Programmatic Initiatives	Yes
Recreational Benefits	1
(enter 1 for Yes, 0 for No)	

EMISSIONS REDUCTION	Tons: Total Over 20 Years	Tons: Average Annual	Value (mil. $): Total Over 20 Years	Value (mil. $): Average Annual
CO Emissions Saved	0	0	$0.0	$0.0
CO_2 Emissions Saved	112	6	$0.0	$0.0
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PM_{10} Emissions Saved	0	0	$0.0	$0.0
$PM_{2.5}$ Emissions Saved	0	0		
SO_X Emissions Saved	0	0	$0.0	$0.0
VOC Emissions Saved	0	0	$0.0	$0.0

Review Model Results (cont.)

Review Emissions Reduction

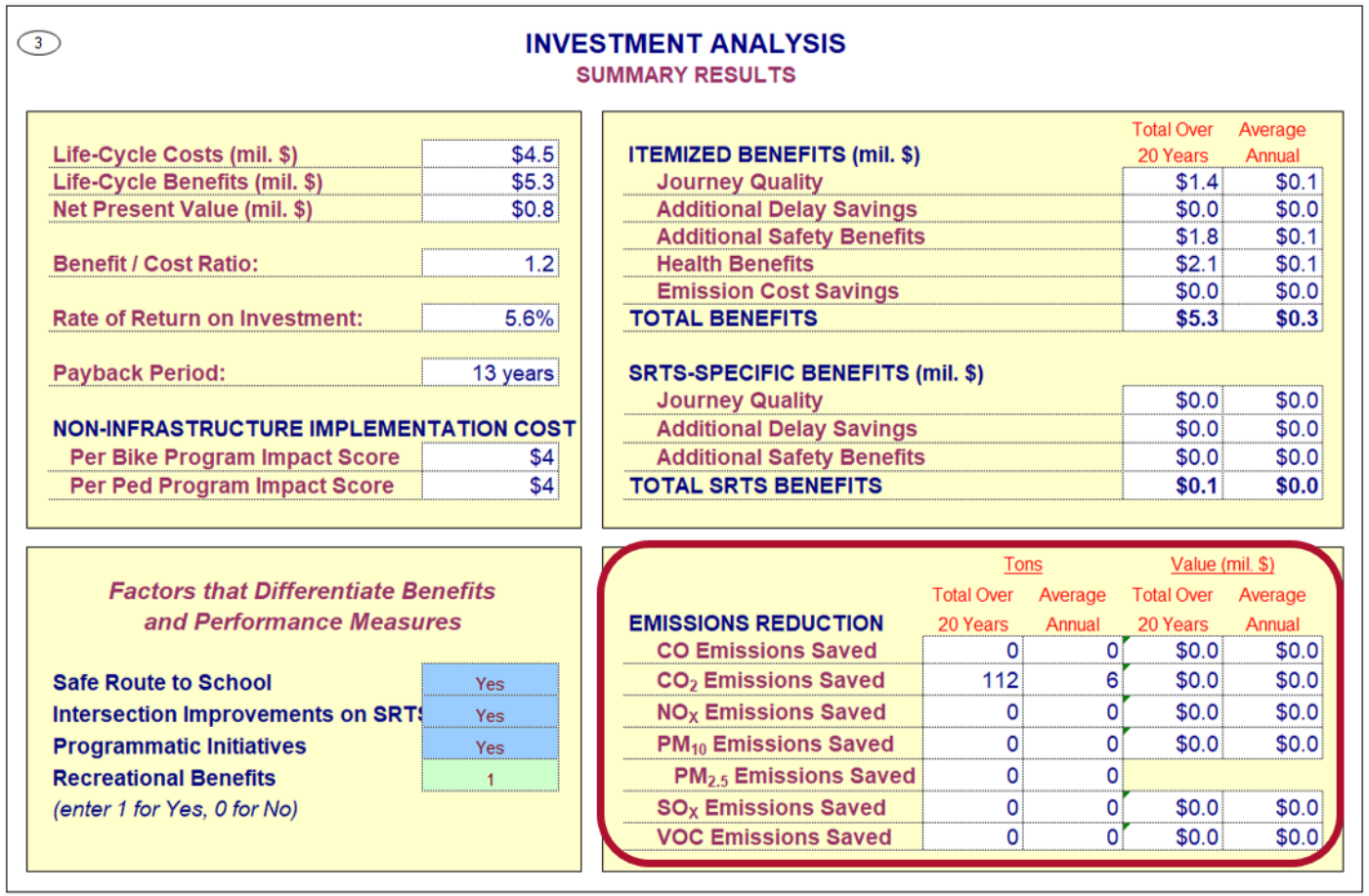
- A positive value implies a reduction in emissions

Do the results correspond with your expectation?

- The B/C ratio is 1.2, which is >1. Is this reasonable?

Do the monetized benefits correspond with the project components and expected impacts?

Module 3 provides more details on how to interpret Cal-B/C results



3

INVESTMENT ANALYSIS
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VOC Emissions Saved	0	0	$0.0	$0.0

Troubleshooting Issues with Cal-B/C Results

Issue	Potential Reason
My B/C ratio is way too low/high?	Project Costs not entered in thousands of dollars. If actual project costs entered, then B/C ratios will be close to 0.001; If costs entered in millions of dollars, then B/C ratios will be on the order of 1000/1 Bicycle/pedestrian forecast demand and/or safety benefits could be too low to offset project cost

05

Conclusion

In this module, you learned…

- A three-step process to start an analysis in the Cal-B/C AT tool
- How to interpret results
- How to troubleshoot problems
- Identified other modules to review

What's Next?

- **Module 8c**
  - Where to find data for your project
- **Module 9c**
  - Example of an analysis in the Cal-B/C AT tool
- **Module 10**
  - Additional information and data sources for BCA in Cal-B/C tools