This cost calculator was developed for the Portsmouth Bicycle and Pedestrian Plan to provide **planning-level cost estimates**. While many assumptions may be applicable for other applications, assumptions and cost variables should be adjusted.

Source:
Unit prices were estimated by using:

- New Hampshire Department of Transportation Weighted Average Unit Prices for Projects in Years: 2013 Qtr 4, 2013 Qtr 3, 2013 Qtr 2, 2013 Qtr 1

- City of Portsmouth, Bid Tabulation, Sagamore Avenue Reconstruction Project - Phase 1, dated July 2,

	Facility Unit Cost (per mile)	Calculation	Assumptions
Off-Street Facilities			
Action: Reconstruction			
Shared Street	$2,190,000.00	Facility Unit Cost = (((5280 feet * 20 feet)/9 feet per yard * $120/SY + 5280 feet * 2 curbs * $10/foot + 55 bollards * $750/bollard * 2 sides + 20 signs * $250/sign + 200 structures * $300/structure + $10,000 + $100,000) * 1.03) *1.2	Assume roadway width is 20 feet with excavation of 12 inches and a non-asphalt surface including the cost of 2 raised intersections at each end. Roadway excavation and materials is $120/SY. Assume curbing to be R&R at $10/foot. Assume bollards at 100 foot spacing on each side of the road (approx 55 bollards per mile) at $750/bollard. Assume 20 signs per mile at $250/sign. Assume utilities and drainage structures need to be adjusted only at 200 structures/mile at $300/structure. Assume erosion control is $10,000/mile and traffic management is $50,000/mile + $50,000/mile for police. Assume mobilization is 3% of the total cost and a contingency of 20%.
Pedestrian Street (Temporary Installation)	$140,000.00	Facility Unit Cost = 66 planters * $2,000/planter + 20 signs * $250/sign	Assumes this a temporary closure. Install planters at entry points. Assume 2 roadway ends and approximately 10 intersections - 20 additional roadway ends with 20 foot wide entries per mile. Assume per planter a cost of $2000/planter and 3 are used at each roadway end (approximately 66 planters). Assume 20 signs per mile at $250/sign.
Pedestrian Street (Permanent Installation)	$2,190,000.00	Facility Unit Cost = (((5280 feet * 20 feet)/9 feet per yard * $120/SY + 5280 feet * 2 curbs * $10/foot + 55 bollards * $750/bollard * 2 sides + 20 signs * $250/sign + 200 structures * $300/structure + $10,000 + $100,000) * 1.03) *1.2	Assume roadway width is 20 feet with excavation of 12 inches and a non-asphalt surface including the cost of 2 raised intersections at each end. Roadway excavation and materials is $120/SY. Assume curbing to be R&R at $10/foot. Assume bollards at 100 foot spacing on each side of the road (approx 55 bollards per mile) at $750/bollard. Assume 20 signs per mile at $250/sign. Assume utilities and drainage structures need to be adjusted only at 200 structures/mile at $300/structure. Assume erosion control is $10,000/mile and traffic management is $50,000/mile + $50,000/mile for police. Assume mobilization is 3% of the total cost and a contingency of 20%.
Shared Use Path (independent ROW)	$1,230,000.00	Facility Unit Cost = (((5280 feet * 11 feet)/9 feet per yard * $35/SY + (1400 trees * $500/tree) + (5280 feet * 6 feet)/9 feet per yard * $5/SY + 2 ramps * $1300/ramp + 5280 feet * 0.33 * $1.00/foot + 20 signs * $250/sign + $10,000 + $25,000) * 1.03) *1.2	Assume asphalt path is 11 feet wide within 20 foot ROW. Excavation and materials is $35/SY. Assume wooded area with removal of 1400 trees per mile at $500/tree. Loam and seed for a 3 foot clear zone excavation and materials is $5/SY. Assume per mile there are 2 ADA ramps at $1300/ramp. Assume no curb modifications. Assumes a dashed center line. Assumes $1.00/LF for thermo from NHDOT. Typically up to 20 signs per mile are installed (includes regulatory and/or warning signs). Assumes $250/sign including materials, post, and installation.Assume erosion control is $10,000/mile. Assume $25,000/mile for landscape. Assume mobilization is 3% of the total cost and a contingency of 20%.
Bicycle Lane - Reconstruction	$590,000.00	Facility Unit Cost = (((5280 feet * 10 feet)/9 feet per yard * $35/SY + 20 ramps * $1300/ramp * 2 sides + 5280 feet * 2 curbs * $10/feet + $1.00/foot * 5280 feet * 1 line * 2 sides + $330/symbol * 30 symbols/mi * 2 sides + $250/sign * 10 signs/mi * 2 sides + 20 structures * $300/structure * 2 sides + 4 units * $4000/unit * 2 sides + $10,000 + $25,000) * 1.03) *1.2	Assume total of 10 feet is reconstructed for bicycle lanes. Roadway excavation and materials is $35/SY. Assume per mile there are 20 ADA ramps at $1300/ramp for each side of the roadway. Assume curbing to be R&R at $10/foot on both sides. Assumes 1 bicycle lane line and 30 bike and arrow symbols per mile are added on both sides of the road. $330 per bike and arrow symbol includes the materials and installation. Assume $1.00/LF for 6" thermo from NHDOT. Assume 10 signs per mile on each side of the roadway at $250/sign. Assume drainage structures need to be adjusted only at 20 structures/mile at $300/structure for both sides of the roadway. Assume drainage structures that need to be changed in type is 4 units/mile at $4000/unit. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Cycle Track - Reconstruction/Road Diet	$710,000.00	Facility Unit Cost = (((5280 feet * 15 feet)/9 feet per yard * $35/SY + 20 ramps * $1300/ramp + 5280 feet * 2 curbs * $10/feet + $330/symbol * 30 symbols/mi * 2 sides + $250/sign * 10 signs/mi * 2 sides + 20 structures * $300/structure * 2 sides + 4 units * $4000/unit * 2 sides + $10,000 + $25,000) * 1.03) *1.2	Assume total of 15 feet is reconstructed for cycle tracks. Roadway excavation and materials is $35/SY. Assume per mile there are 20 ADA ramps at $1300/ramp. Assume curbing to be R&R at $10/foot on both sides. Assumes 30 bike and arrow symbols per mile are added on both sides of the road. $330 per bike and arrow symbol includes the materials and installation. Assume 10 signs per mile on each side of the roadway at $250/sign. Assume drainage structures need to be adjusted only at 20 structures/mile at $300/structure. Assume drainages that need to be changed in type is 4 units/mile at $4000/unit. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.

	Facility Unit Cost (per mile)	Calculation	Assumptions
Side-Path, 1 Side - Reconstruction/Road Diet	$640,000.00	Facility Unit Cost = (((5280 feet * 17 feet)/9 feet per yard * $35/SY * 1 side + 20 ramps * $1300/ramp * 1 side + 5280 feet * 1 curbs * $10/feet + 5280 feet * 0.33 * $1.00/foot + 10 signs * $250/sign * 1 side + 20 structures * $300/structure + 4 units * $4000/unit * 1 side + $10,000 + $25,000 + $25,000) * 1.03) *1.2	Assume roadway width is 17 feet on one side of the road. Roadway excavation and materials is $35/SY. Assume per mile there are 20 ADA ramps at $1300/ramp for each side of the road. Assume curbing to be R&R at $10/foot for one side of the road. Assumes a dashed center line. Assume 10 signs per mile at $250/sign for one side of the road. Assume drainage structures need to be adjusted only at 20 structures/mile at $300/structure for one side of the road. Assume drainages that need to be changed in type is 4 units/mile at $4000/unit for one side of the road. Assume erosion control is $10,000/mile and traffic management is $25,000/mile + $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Side-Path, 2 Sides - Reconstruction/Road Diet	$1,200,000.00	Facility Unit Cost = (((5280 feet * 17 feet)/9 feet per yard * $35/SY * 2 sides + 20 ramps * $1300/ramp * 2 sides + 5280 feet * 2 curbs * $10/feet + 5280 feet * 0.33 * $1.00/foot * 2 sides + 10 signs * $250/sign * 2 sides + 20 structures * $300/structure * 2 sides + 4 units * $4000/unit * 2 sides + $10,000 + $25,000 + $25,000) * 1.03) *1.2	Assume roadway width is 17 feet on both sides of the road. Roadway excavation and materials is $35/SY. Assume per mile there are 20 ADA ramps at $1300/ramp for each side of the road. Assume curbing to be R&R at $10/foot for both sides of the road. Assumes a dashed center line. Assume 10 signs per mile at $250/sign for both sides of the road. Assume drainage structures need to be adjusted only at 20 structures/mile at $300/structure for both sides of the road. Assume drainages that need to be changed in type is 4 units/mile at $4000/unit for both sides of the road. Assume erosion control is $10,000/mile and traffic management is $25,000/mile + $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Add Sidewalk, One Side - Cement Concrete Sidewalk	$520,000.00	Facility Unit Cost = (((5280 feet * 8 feet)/9 feet per yard * $60/SY + 20 ramps * $1300/ramp + 5280 feet * 1 curbs * $10/feet + 20 structures * $300/structure + 4 units * $4000/unit + $10,000 + $25,000) * 1.03) *1.2	Assume additional sidewalk is 6 feet plus 2 feet for installation. Sidewalk excavation and materials is $60/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on one side of the roadway. Assume curbing to be R&R at $10/foot for one side. Assume drainage structures need to be adjusted only at 20 structures/mile at $300/structure. Assume drainages that need to be changed in type is 4 units/mile at $4000/unit. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Add Sidewalk, Two Sides - Cement Concrete Sidewalk	$990,000.00	Facility Unit Cost = (((5280 feet * 8 feet)/9 feet per yard * $60/SY * 2 sides + 20 ramps * $1300/ramp * 2 sides + 5280 feet * 2 curbs * $10/feet + 20 structures * $300/structure * 2 sides + 4 units * $4000/unit * 2 sides + $10,000 + $25,000) * 1.03) *1.2	Assume additional sidewalk is 6 feet plus 2 feet for installation on both sides of the roadway. Sidewalk excavation and materials is $60/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on both sides of the roadway. Assume curbing to be R&R at $10/foot for both sides. Assume drainage structures need to be adjusted only at 20 structures/mile at $300/structure on both sides. Assume drainages that need to be changed in type is 4 units/mile at $4000/unit on both sides. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Add Sidewalk, One Side - Brick Sidewalk	$870,000.00	Facility Unit Cost = (((5280 feet * 8 feet)/9 feet per yard * $120/SY + 20 ramps * $1300/ramp + 5280 feet * 1 curbs * $10/feet + 20 structures * $300/structure + 4 units * $4000/unit + $10,000 + $25,000) * 1.03) *1.2	Assume additional sidewalk is 6 feet plus 2 feet for installation. Sidewalk excavation and materials is $120/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on one side of the roadway. Assume curbing to be R&R at $10/foot for one side. Assume drainage structures need to be adjusted only at 20 structures/mile at $300/structure. Assume drainages that need to be changed in type is 4 units/mile at $4000/unit. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Add Sidewalk, Two Sides - Brick Sidewalk	$1,690,000.00	Facility Unit Cost = (((5280 feet * 8 feet)/9 feet per yard * $120/SY * 2 sides + 20 ramps * $1300/ramp * 2 sides + 5280 feet * 2 curbs * $10/feet + 20 structures * $300/structure * 2 sides + 4 units * $4000/unit * 2 sides + $10,000 + $25,000) * 1.03) *1.2	Assume additional sidewalk is 6 feet plus 2 feet for installation on both sides of the roadway. Sidewalk excavation and materials is $120/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on both sides of the roadway. Assume curbing to be R&R at $10/foot for both sides. Assume drainage structures need to be adjusted only at 20 structures/mile at $300/structure on both sides. Assume drainages that need to be changed in type is 4 units/mile at $4000/unit on both sides. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.

	Facility Unit Cost (per mile)	Calculation	Assumptions
Reconstruct Sidewalk, One Side - Cement Concrete Sidewalk	$410,000.00	Facility Unit Cost = (((5280 feet * 6 feet)/9 feet per yard * $60/SY + 20 ramps * $1300/ramp + 5280 feet * 1 curbs * $10/feet + $10,000 + $25,000) * 1.03) *1.2	Assume sidewalk is 6 feet. Sidewalk excavation and materials is $60/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on one side of the roadway. Assume curbing to be R&R at $10/foot for one side. Assume no drainage modifications. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Reconstruct Sidewalk, Two Sides - Cement Concrete Sidewalk	$770,000.00	Facility Unit Cost = (((5280 feet * 6 feet)/9 feet per yard * $60/SY * 2 sides + 20 ramps * $1300/ramp * 2 sides + 5280 feet * 2 curbs * $10/feet + $10,000 + $25,000) * 1.03) *1.2	Assume sidewalk is 6 feet on both sides of the roadway. Sidewalk excavation and materials is $60/SY. Assume per mile there are 4 ADA ramps at $1300/ramp on both sides of the roadway. Assume curbing to be R&R at $10/foot for both sides. Assume no drainage modifications. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Reconstruct Sidewalk, One Side - Brick Sidewalk	$670,000.00	Facility Unit Cost = (((5280 feet * 6 feet)/9 feet per yard * $120/SY + 20 ramps * $1300/ramp + 5280 feet * 1 curbs * $10/feet + $10,000 + $25,000) * 1.03) *1.2	Assume sidewalk is 6 feet. Sidewalk excavation and materials is $120/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on one side of the roadway. Assume curbing to be R&R at $10/foot for one side. Assumes no drainage modifications. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Reconstruct Sidewalk, Two Sides - Brick Sidewalk	$1,290,000.00	Facility Unit Cost = (((5280 feet * 6 feet)/9 feet per yard * $120/SY * 2 sides + 20 ramps * $1300/ramp * 2 sides + 5280 feet * 2 curbs * $10/feet + $10,000 + $25,000) * 1.03) *1.2	Assume sidewalk is 6 feet on both sides of the roadway. Sidewalk excavation and materials is $120/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on both sides of the roadway. Assume curbing to be R&R at $10/foot for both sides. Assumes no drainage modifications. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Widen Sidewalk, One Side - Cement Concrete Sidewalk	$580,000.00	Facility Unit Cost = (((5280 feet * 10 feet)/9 feet per yard * $60/SY + 20 ramps * $1300/ramp + 5280 feet * 1 curbs * $10/feet + $10,000 + $25,000) * 1.03) *1.2	Assume new sidewalk is 10 feet. Sidewalk excavation and materials is $60/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on one side of the roadway. Assume curbing to be R&R at $10/foot for one side. Assume no drainage modifications. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Widen Sidewalk, Two Sides - Cement Concrete Sidewalk	$1,110,000.00	Facility Unit Cost = (((5280 feet * 10 feet)/9 feet per yard * $60/SY * 2 sides + 20 ramps * $1300/ramp * 2 sides + 5280 feet * 2 curbs * $10/feet + $10,000 + $25,000) * 1.03) *1.2	Assume new sidewalk is 10 feet on both sides of the roadway. Sidewalk excavation and materials is $60/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on both sides of the roadway. Assume curbing to be R&R at $10/foot for both sides. Assume no drainage modifications. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Widen Sidewalk, One Side - Brick Sidewalk	$1,020,000.00	Facility Unit Cost = (((5280 feet * 10 feet)/9 feet per yard * $120/SY + 20 ramps * $1300/ramp + 5280 feet * 1 curbs * $10/feet + $10,000 + $25,000) * 1.03) *1.2	Assume new sidewalk is 10 feet. Sidewalk excavation and materials is $120/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on one side of the roadway. Assume curbing to be R&R at $10/foot for one side. Assumes no drainage modifications. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.
Widen Sidewalk, Two Sides - Brick Sidewalk	$1,980,000.00	Facility Unit Cost = (((5280 feet * 10 feet)/9 feet per yard * $120/SY * 2 sides + 20 ramps * $1300/ramp * 2 sides + 5280 feet * 2 curbs * $10/feet + $10,000 + $25,000) * 1.03) *1.2	Assume new sidewalk is 10 feet on both sides of the roadway. Sidewalk excavation and materials is $120/SY. Assume per mile there are 20 ADA ramps at $1300/ramp on both sides of the roadway. Assume curbing to be R&R at $10/foot for both sides. Assumes no drainage modifications. Assume erosion control is $10,000/mile and traffic management is $25,000/mile. Assume mobilization is 3% of the total cost and a contingency of 20%.

	Facility Unit Cost (per mile)	Calculation	Assumptions
On-Street Facilities			
Action: Add Striping and Markings; Add Striping and Markings, 2 Lanes; Remove Parking			
Bike Lane, One Side - Parking Both Sides	$ 23,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 2 lines + $330/symbol * 30 symbols/mi + $250/sign * 10 signs/mi * 1 side	Assumes 2 bicycle lane lines and 30 bike and arrow symbols per mile are added on one side of the roadway to create the bicycle lane. $330 per bike and arrow symbol includes the materials and installation. Assumes $1.00/LF for thermo from NHDOT. Typically up to 10 signs per mile are installed on one side for the bicycle lane (includes regulatory and/or warning signs). Assumes $250/sign including materials, post, and installation.
Four Foot Bike Lane, Both Sides - No Parking Bike Lane, Both Sides - No Parking	$ 35,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 1 lines * 2 sides + $330/symbol * 30 symbols/mi * 2 sides + $250/sign * 10 signs/mi * 2 sides	Assumes 1 bicycle lane line and 30 bike and arrow symbols per mile are added to both sides of the roadway to create the bicycle lanes. $330 per bike and arrow symbol includes the materials and installation. Assumes $1.00/LF for thermo from NHDOT. Typically up to 10 signs per mile are installed on each side for bicycle lanes (includes regulatory and/or warning signs). Assumes $250/sign including materials, post, and installation.
Bike Lane, Both Sides - Parking One Side	$ 41,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 3 lines + $330/symbol * 30 symbols/mi * 2 sides + $250/sign * 10 signs/mi * 2 sides	Assumes 1 bicycle lane line and 30 bike and arrow symbols per mile are added to one side of the roadway and 2 bicycle lane lines and 30 bike and arrow symbols per mile are added to the side with on-street parking. $330 per bike and arrow symbol includes the materials and installation. Assumes $1.00/LF for thermo from NHDOT. Typically up to 10 signs per mile are installed on each side for bicycle lanes (includes regulatory and/or warning signs). Assumes $250/sign including materials, post, and installation.
Bike Lane, Both Sides - Parking Both Sides	$ 46,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 2 lines * 2 sides + $330/symbol * 30 symbols/mi * 2 sides + $250/sign * 10 signs/mi * 2 sides	Assumes 2 bicycle lane lines and 30 bike and arrow symbols per mile are added on both sides of the roadway to create the bicycle lanes. $330 per bike and arrow symbol includes the materials and installation. Assume $1.00/LF for 6" thermo from NHDOT. Typically up to 10 signs per mile are installed on each side for bicycle lanes (includes regulatory and/or warning signs). Assumes $250/sign including materials, post, and installation.
Buffered Bike Lane, Both Sides - Parking Both Sides	$ 61,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 3 lines * 2 sides + $1.00/foot * 5280 * 0.4 * 2 sides + $330/symbol * 30 symbols/mi * 2 sides + $250/sign * 10 signs/mi * 2 sides	Assumes 3 bicycle lane lines and 30 bike and arrow symbols per mile are added on both sides of the road. Assumes a 6" diagonal stripe every 10 feet within a 3' buffer zone on both sides. $330 per bike and arrow symbol includes the materials and installation. Assume $1.00/LF for 6" thermo from NHDOT. Typically up to 10 signs per mile are installed on each side for bicycle lanes (includes regulatory and/or warning signs). Assumes $250/sign including materials, post, and installation.
Buffered Bike Lane, Both Sides - Parking One Side	$ 55,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 3 lines + $1.00/foot * 5280 feet * 2 lines + $1.00/foot * 5280 * 0.4 * 2 sides + $330/symbol * 30 symbols/mi * 2 sides + $250/sign * 10 signs/mi * 2 sides	Assumes 3 bicycle lane lines and 30 bike and arrow symbols per mile are added to one side of the road adjacent to parking and 2 bicycle lane lines and 30 bike and arrow symbols per mile on one side of the road. Assumes a 6" diagonal stripe every 10 feet within a 3' buffer zone on both sides. $330 per bike and arrow symbol includes the materials and installation. Assume $1.00/LF for 6" thermo from NHDOT. Typically up to 10 signs per mile are installed on each side for bicycle lanes (includes regulatory and/or warning signs). Assumes $250/sign including materials, post, and installation.
Contraflow Bike Lane	$ 34,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 2 lines + $330/symbol * 30 symbols/mi + $330/symbol * 30 symbols/mi + $250/sign * 10 signs/mi + $250/sign * 5 signs/mi	Assumes double yellow centerline and 30 bike and arrow symbols per mile are added to one side of the road for a contraflow bike lane and 30 shared lane markings symbols per mile are added for the shared travel lane. $330 per bike and arrow or shared lane marking symbol includes the materials and installation. Assume $1.00/LF for 6" thermo from NHDOT. Typically up to 10 signs per mile are installed on one side for the contraflow bicycle lanes (includes regulatory and/or warning signs) and up to 5 signs per mile (including regulatory and/or warning signs) are installed for each shared lane marking travel lane. Assumes $250/sign including materials, post, and installation.

	Facility Unit Cost (per mile)	Calculation	Assumptions
Climbing Lane - No Parking	$ 29,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 1 line + $330/symbol * 30 symbols/mi * 1 side + $330/symbol * 30 symbols/mi + $250/sign * 10 signs/mi + $250/sign * 5 signs/mi	Assumes 1 bicycle lane line and 30 bike and arrow symbols per mile are added to one side of the road for a bike lane and 30 shared lane markings symbols per mile are added for the shared travel lane. $330 per bike and arrow or shared lane marking symbol includes the materials and installation. Assume $1.00/LF for 6" thermo from NHDOT. Typically up to 10 signs per mile are installed on one side for the bicycle lanes (includes regulatory and/or warning signs) and up to 5 signs per mile (including regulatory and/or warning signs) are installed for each shared lane marking travel lane. Assumes $250/sign including materials, post, and installation.
Shared Lane Markings, One Side	$ 11,000.00	Facility Unit Cost = $330/symbol * 30 symbols/mi + $250/signs * 5 signs/mi * 1 side	Assumes a symbol will be spaced every 30 feet on one side of the roadway. $330 per shared lane marking symbol includes the materials and installation. Typically up to 5 signs per mile (including regulatory and/or warning signs) are installed for each shared lane marking travel lane. Assumes $250/sign including materials, post, and installation.
Shared Lane Markings, Both Sides	$ 22,000.00	Facility Unit Cost = $330/symbol * 30 symbols/mi * 2 sides + $250/signs * 5 signs/mi * 2 sides	Assumes a symbol will be spaced every 30 feet on both sides of the roadway. $330 per shared lane marking symbol includes the materials and installation. Typically up to 5 signs per mile (including regulatory and/or warning signs) are installed for each shared lane marking travel lanes. Assumes $250/sign including materials, post, and installation.
Signed Route	$ 13,000.00	Facility Unit Cost = $250/sign * 25 signs/mi * 2 sides	Assumes that approximately 25 signs (including regulatory, warning, and wayfinding signs) will be used per mile on each side of the roadway. Assumes $250/sign including materials, post, and installation.
Two-Way Cycle Track, One Side	$ 127,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 2 lines + $1.00/foot * 0.33 * 5280 feet + $330/symbol * 60 symbols + $1.00/foot * 5280 * 0.7 + $50/flexpost * 264 posts/mile + $6/SF * 20 * 24 feet * 12 feet + $330/symbol * 20 driveways * 6 symbols + $250/signs * 15 signs/mi	Assumes 2 lane lines, a dashed centerline and 60 bike and arrow symbols per mile are added on one side of the road. Assumes a 6" diagonal stripe every 10 feet within a 5' buffer zone. $330 per bike and arrow symbol includes the materials and installation. Assumes a 20 foot flexpost spacing or approx 264 per mile. $50 per flexpost includes the materials and installation. Assumes green surface color at a cost of $6/SF for intersections or driveways and estimated at 20 intersections or driveways per mile. Assumes the area for the green surface color is 12 feet wide and 24 feet long. Assumes six symbols for every driveway. Typically up to 15 signs per mile are installed on one side for a cycle track (includes regulatory, warning, and/or wayfinding signs). Assumes $250/sign including materials, post, and installation.
Cycle Track, Both Sides	$ 153,000.00	Facility Unit Cost = $1.00/foot * 5280 feet * 2 lines * 2 sides + $330/symbol * 30 symbols * 2 sides + $1.00/foot * 5280 * 0.4 * 2 sides + $50/flexpost * 264 posts/mile * 2 sides + $6/SF * 20 * 24 feet * 6 feet * 2 sides + $330/symbol * 20 driveways * 3 symbols * 2 sides + $250/signs * 15 signs/mi * 2 sides	Assumes 2 lane lines and 30 bike and arrow symbols per mile are added on both sides of the road. Assumes a 6" diagonal stripe every 10 feet within a 3' buffer zone on both sides. $330 per bike and arrow symbol includes the materials and installation. Assumes a 20 foot flexpost spacing or approx 264 per mile. $50 per flexpost includes the materials and installation. Assumes green surface color at a cost of $6/SF for intersections or driveways and estimated at 20 intersections or driveways per mile. Assumes the area for the green surface color is 6 feet wide and 24 feet long. Assumes three symbols for every driveway. Typically up to 15 signs per mile are installed on one side for a cycle track (includes regulatory, warning, and/or wayfinding signs). Assumes $250/sign including materials, post, and installation.

	Facility Unit Cost (per mile)	Calculation	Assumptions
Action: Lane Diet, Road Diet			
Grind 1 line	$ 5,300.00	Grind 1 line = $1/foot * 5280 feet * 1 line	Assume eradicating 1 lane line. Assumes grinding costs $1.00/foot
Grind 2 lines	$ 10,600.00	Grind 2 lines = $1/foot * 5280 feet * 2 lines	Assume eradicating 2 lane lines. Assumes grinding costs $1.00/foot
Grind 3 lines	$ 15,900.00	Grind 3 lines = $1/foot * 5280 feet * 3 lines	Assume eradicating 3 lane lines. Assumes grinding costs $1.00/foot
Grind 4 lines	$ 21,200.00	Grind 4 lines = $1/foot * 5280 feet * 4 lines	Assume eradicating 4 lane lines. Assumes grinding costs $1.00/foot
Grind 5 lines	$ 26,400.00	Grind 5 lines = $1/foot * 5280 feet * 5 lines	Assume eradicating 5 lane lines. Assumes grinding costs $1.00/foot
Maintenance Costs			
Replace Signs (on facilities)	$5,000.00	250*20	Assumes 20 regulatory, warning, wayfinding signs per mile of network at $250 per sign over a ten year period.
Sweep bicycle lanes and other on-road facilities	$1,000.00		Assumes that spot sweeping after major rain or snow/ice storms and sweeping of bicycle lanes two times per year averages $1,000 per mile. Total cost depends on the number of on-road Bicycle Facility Network miles that are complete and number of major storm events.
Replace Pavement markings (on-road facilities)	*Paint markings generally need to be repainted every 2 to 3 years.*		
Climbing lanes	$52,920.00	Facility Unit Cost = $0.5 per linear foot * 5280 feet + $250 per bike and arrow * 30 bike and arrow per mile + $250 per shared lane marking * 30 shared lane markings per mile	Assumes all markings repainted and only one line attributed to bike lane at $0.5 per linear foot * 5280 feet + $250 per marking * 30 markings per mile + $250 per shared lane marking * 30 shared lane markings per mile
Shared laned markings	$45,000.00	Facility Unit Cost = $250 per shared lane marking * 30 shared lane markings per mile * 2 sides	Assumes all markings repainted at $250 per shared lane marking * 30 shared lane markings per mile * 2 sides
Bicycle lanes	$55,771.20	Facility Unit Cost = $0.5 per linear foot * 5280 feet * 2 lines * 2 sides + $250 per bike and arrow * 30 bike and arrow per mile * 2 sides	Assumes all markings repainted at $0.5 per linear foot * 5280 feet * 1 lines * 2 sides + $250 per marking * 30 markings per mile * 2 sides
Cycle track	$6,750.00	Facility Unit Cost = $250 per bike and arrow symbol * 9 per mile * 2 sides	Assumes bike and arrow symbols repainted per mile*$250 * 2 sides
Buffered bike lane	$77,148.00	Facility Unit Cost = 2 lines*5280*$0.5* 2 sides)+(1056 LF diagonal lines*2*$0.5)+(30 bike and arrow per mile*$250) + .25* 264 flex post bollards per mile*2 sides*$50	Assumes all markings are repainted at $0.5 per linear foot*5280*2 lines+1056 LF diagonal lines*2 sides*$3 per linear foot +30 bike and arrow per mile*$250 and 25% of flexible bollard posts are replaced.
Global Assumptions			
1) Costs are generally over-estimated.			
2) Cost estimates do not include design. Design costs, which includes construction planning, public process, facility design, and other background work required to implement the project, can generally be estimated at 10% to 20% of the facility construction cost. More controversial projects may have higher design cost.			
3) Cost estimates involving major construction include 20% contingency costs. No costs were estimated for ROW easements or environmental permitting.			
4) Thermoplastic is assumed for all roadway markings.			