

# CHAPTER 8 - COST OPINIONS, FUNDING AND IMPLEMENTATION

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## 8.1. INTRODUCTION

As described in Chapters 5 and 6, the recommended Miami Valley bikeway system consists of a comprehensive network of on- and off-street routes, supplemented by various programmatic measures. This section identifies costs for these proposed bicycle improvements, in addition to project prioritization, phasing and funding.

## 8.2. PROJECT IMPLEMENTATION PROCESS

MVRPC's Transportation Improvement Plan (TIP) provides funding for capital improvements including new bicycle facilities as well as rehabilitation of existing facilities. The TIP is updated periodically to address the deletion of projects that have been completed, the addition of new projects, and changes to budgets designated for particular improvements.

The steps required to implement projects identified in this Plan will vary by project. Many signing and striping projects can be completed by local agencies and are exempt from NEPA requirements. Such projects can be implemented using local or grant funds with project level review by relevant bodies (e.g., City Council), if required due to the visibility or importance of the project. More complex projects with greater associated impacts typically include the following steps:

- Public outreach to introduce proposed project or program to appropriate communities, neighborhood groups, business groups and neighbors
- Preparation of a Feasibility Study involving a conceptual design (with consideration of possible alternatives and environmental issues)
- Developing detailed cost estimates for individual projects or programs
- Secure, as necessary, outside funding and any applicable environmental approvals
- Approval of the project by the relevant government body (e.g., a City Council)
- Completion of final plans, specifications and estimates, advertising for bids, receipt of bids, and award of contract(s)
- Construction of the project/ implementation of the program

## 8.3. COST BREAKDOWN

Cost opinions are listed for recommended bikeway projects (engineering), maintenance activities, and education, encouragement and enforcement activities.

### 8.3.1. Engineering

Described in earlier chapters, the regional bikeway network was developed using input from MVRPC, the Bikeways Plan Steering Committee, local communities, the bicycle suitability analysis, the on-line survey, requests from community members received during the development of this plan, and other sources.

After the recommended network was finalized, the High Priority projects were reviewed to identify appropriate bicycle facility types (e.g., shared use paths, bike lanes, shared roadways, etc.). Recommended bikeway types were selected based on field reconnaissance, high-resolution aerial photos, MVRPC GIS data, other relevant planning documents, and discussions with several agencies and system users. Table 15 describes the facility types and assumptions used for developing cost opinions.

**Table 15: Bicycle Facility Types Used for Costs Opinions**

Bicycle Facility Type	Description
Shared Use Path	Ten- to twelve-foot wide paved path
Shoulder Bikeway (rural areas)	6' wide shoulder along roadway to provide extra room for bicyclists and motorists
Bike Lane (road widening)	Roadway must be widened to provide 5' bike lanes
Bike Lane Striping (no widening)	Minimum 5' bike lanes can be striped on roadway without modifying number of motor vehicle lanes or roadway width
Bike Lane Striping ("road diet")	Motor vehicle ADT is low enough to eliminate one or more travel lanes and retrofit street (through re-striping) to provide bike lanes
Shared-Lane Markings	Pavement stencils on shared vehicle/bicycle travel lanes on higher-volume streets indicating to motorists and bicyclists where bicyclists are expected to ride
Signed Shared Roadway	Install wayfinding signs and bike route signs along roadway
Bicycle Boulevard	Signage, pavement markings, intersection treatments, traffic calming, and traffic diversion indicating street is a bicycle priority street

Table 16 lists unit costs for each on- and off-street bikeway facility type. Cost opinions are based on per-mile 2007 averages in Ohio and are planning level, and only include construction costs. They do not include preliminary engineering, design, feasibility, environmental clearance, inspection, utility or right-of-way acquisition costs. Project-specific factors such as grading, landscaping, intersection modification, right-of-way acquisition, and bridge construction may increase the actual cost of construction, sometimes significantly.

Before constructing any recommended facilities, additional field work will be required to verify conditions, including but not limited to: roadway widths, travel lanes, actual motor vehicle speeds, traffic volumes, bicycle and motor vehicle travel patterns and conflicts, signal timing and actuation, and pavement conditions. Final bikeway treatments should be selected based on verified conditions.

**Table 16: Unit Cost Assumptions**

Bicycle Facility Type	Includes...	Construction Cost per Mile	Survey/Design (12%)	Contingency (10%)	Admin. (10%)	Traffic Control and Mobilization (7%)	Total Cost per Mile
Shared Use Path	Construction costs. Based on ODOT construction awards, 2003-2005	\$158,770	\$19,050	\$15,877	\$15,877	\$11,114	\$220,688
Shoulder Bikeway (rural areas)	6 min. paved shoulder	\$169,382	\$20,326	\$16,938	\$16,938	\$11,857	\$235,441
Bike Lane (road widening)	5' bike lane construction on both sides. Based on ODOT construction awards, 2003-2005	\$73,920	\$8,870	\$7,392	\$7,392	\$5,175	\$102,749
Bike Lane Striping (no widening)	5' bike lane; includes striping, pavement markings, signage	\$8,892	\$1,067	\$889	\$889	\$622	\$12,360
Bike Lane Striping ("road diet")	Roadway re-striping (four-lane to three-lane conversion)	\$66,972	\$8,037	\$6,697	\$6,697	\$4,688	\$93,091
Shared-Lane Markings	Pavement markings and signage	\$3,683	\$442	\$368	\$368	\$258	\$5,120
Signed Shared Roadway	Signage	\$1,571	\$189	\$157	\$157	N/A	\$2,074
Bicycle Boulevard (minimal treatments)	Signage, pavement markings, two intersection crossing improvements per mile	\$24,739	\$2,969	\$2,474	\$2,474	N/A	\$32,656
Bicycle Boulevard (more intensive treatments)	Signage, pavement markings, traffic calming, two intersection crossing improvements per mile	\$74,739	\$8,969	\$7,474	\$7,474	N/A	\$98,656

### 8.3.2. High Priority Project Cost Opinions

Table 17 presents cost opinions for the approximately 100 High Priority projects. Build-out of the High Priority project network will result in nearly 360 new miles of bikeways. The total cost of constructing the High Priority bicycle projects (including projects identified as "feasibility studies") is estimated at about \$100

million. It should be noted that many of the on-street bikeway projects do not have to be stand-alone projects, and could be developed in conjunction other concurrent street improvements (e.g., widening for additional travel lanes). This would substantially reduce the estimated cost of the recommended bikeway network. It should also be noted that this table includes the approximately 20 Top Priority projects which would represent initial strategies for implementing this Plan.

**Table 17: High Priority Project Cost Opinions**

County	Project	Lead Agency	Facility Type	Approx. Length (miles)	Estimated Cost (thousand)
Greene	Construct shared use path along SR 725 between Sackett-Wright Park in Bellbrook and the Little Miami Scenic Trail in Spring Valley	Greene County	Off-street	3.9	\$1,727
Greene	Widen shoulders and add sidewalks/pedestrian paths on Grange Hall Rd./National Rd. between Kauffman Ave. and Indian Ripple Rd.	Greene County	On-street	7.4	\$2,523
Greene	Construct the Three Counties Trail between Wright Brothers-Huffman Prairie Bikeway and Haddix Rd.	Greene County Park Dist.	Off-street	2.3	\$535
Greene	Construct a bicycle/pedestrian bridge over I-675 near Center Park Blvd.	Beavercreek, Fairborn	Off-street	0.5	\$3,000
Greene	Widen shoulders and add sidewalks/pedestrian paths on Shakertown Rd. between County Line Rd. and U.S. 35/Factory Rd.	Greene County	On-street	4.2	\$7,534
Greene	Widen shoulders on Yellow Springs-Fairfield Rd. between Xenia Drive and Little Miami Scenic Trail	Greene County, Fairborn, Yellow Springs	On-street	6.8	\$1,552
Greene	Construct shared use path along Fairfield Rd., Swigart Rd., and Alpha-Bellbrook Rd. between Shakertown Rd. and SR 725	Greene County	Off-street	5.5	\$913
Greene	Widen shoulders and add sidewalks on New Germany-Trebein Rd. between Grange Hall Rd. and Beaver Valley Rd.	Greene County	On-street	3.2	\$2,040
Greene	Widen shoulders on SR 343 and SR 72 between Yellow Springs and Cedarville	ODOT	On-street	7.2	\$915
Greene	Widen shoulders on SR 370 between SR 343 and John Bryan State Park	ODOT	On-street	1.3	\$165
Greene	Retrofit Wilmington Pike to provide bike lanes between Cloy Rd. and Brown Rd.	Greene County	On-street	1.6	\$15
Greene	Widen Indian Ripple Rd. bridge over I-675 and roadway approaches to provide bike lanes	ODOT	On-street	0.3	\$361
Greene	Integrate bike lanes with future Factory Rd. overpass at U.S. 35	ODOT	On-street	0.3	\$2,537
Greene	Widen shoulders on Bickett Rd. between U.S. 42 and future Jamestown Connector	Greene County	On-street	3.1	\$394
Greene	Construct bike lanes and complete sidewalk gaps on Beaver Valley Rd. between Dayton-Xenia Rd. and New Germany-Trebein Rd.	Greene County	On-street	4.0	\$517

Greene	Widen shoulders on Charleston Rd. and Selma-Jamestown Rd. between Jamestown and Greene/Clarke county line	Greene County	On-street	10.5	\$1,334
Greene	Widen shoulders on SR 72 between Bowersville and Jamestown	ODOT	On-street	5.8	\$737
Greene	Develop on-street bikeway connection (widened shoulders) between Spring Valley and Bowersville via Spring Valley-Pointersville Rd. and Hussey Rd.	Greene County	On-street	16.2	\$2,058
Miami	Construct Troy Bike Hub structure	Troy	Off-street	N/A	\$200
Miami	Construct shared use path connecting Treasure Island and Duke Park in Troy	Troy	Off-street	1.0	\$159
Miami	Widen shoulders along SR 55 and SR 589, providing an on-street bikeway linking Troy, Casstown, and Fletcher	ODOT, Miami County, Troy	On-street	9.5	\$500
Miami	Construct shared use path along former railroad corridor between Laura and Ludlow Falls	Miami County	Off-street	6.6	\$1,158
Miami	Construct shared use path roughly paralleling SR 55 between West Milton and Troy	Miami County	Off-street	6.2	\$980
Miami	Construct shared use path between Piqua and Miami/Champaign county line via Garbry's Big Woods Reserve/Sanctuary	Miami County	Off-street	7.2	\$1,142
Miami	Widen shoulders on County Road 25A between Swailes Rd. and Dye Mill Rd.; widen shoulders on Dye Mill Rd. between County Road 25A and the Great Miami River Trail	Miami County	On-street	0.6	\$76
Miami	Retrofit Dorset Rd. to include bike lanes between Market and Main streets	Troy	On-street	1.7	\$16
Miami	Widen shoulders on Swailes Rd. between Nashville Rd. and County Road 25A	Miami County	On-street	3.1	\$394
Miami	Widen roadway shoulders along the Cardinal Trail route between Covington and the Miami/Champaign county line (Walnut St., County Road 32, Farrington Rd., Peterson Rd., Alcony-Canover Rd., Loy Rd.)	Miami County	On-street	23.5	\$2,239
Miami	Implement bicycle/pedestrian improvements at intersections of Market St. at Staunton Rd., and Adams St. at Staunton Rd.	Troy	On-street	N/A	\$600
Miami	Construct shared use path on former railroad corridor between Troy and New Carlisle	Miami County	Off-street	9.5	\$1,673
Miami	Conduct trail feasibility study identifying east-west trail corridor north of Dayton Int'l. Airport	Miami County	Feasibility study	N/A	\$100
Miami	Widen roadway shoulders along the Cardinal Trail route (Covington-Gettysburg Rd.) between Covington and the Miami/Darke county line	Miami County	On-street	4.2	\$549

Miami	Construct shared use path roughly paralleling SR 48 between Covington and Englewood	ODOT, Miami County	Off-street	17.0	\$2,699
Miami	Construct shared use path along the Stillwater River in West Milton	Miami Conservancy Dist.	Off-street	7.1	\$1,219
Miami	Expand shared use path systems in Troy and Piqua to connect residential areas with neighborhood parks	Troy, Piqua	Off-Street	10.0	\$1,588
Miami	Construct sidewalks on SR 41 between Washington Rd. and Market St.	ODOT, Troy	On-street	3.2	\$781
Miami	Repave existing shared use paths in Duke Park	Troy	Off-street	2.0	\$115
Miami	Construct shared use path linking Charleston Falls preserve with Wildcat Rd; widen shoulders on Wildcat Rd. between future shared use path and Kellenburger Rd.	Miami County, Huber Heights	On-/off-street	2.4	\$343
Miami	Construct shared use path along SR 41 between SR 202 and Lost Creek Preserve	ODOT, Miami County	Off-street	1.2	\$191
Miami	Widen shoulders along Tipp-Elizabeth Road between 3rd St. and Honey Creek Preserve	Miami County	On-street	0.7	\$409
Miami	Construct bike lanes and complete sidewalk gaps on McKaig Ave. between SR 718 and Monroe St.	Miami County, Troy	On-street	2.7	\$349
Miami	Develop on-street bikeway connection (widened shoulders) between Bradford and Stillwater Prairie Preserve via Klinger Road, Greenville Falls-Clayton Rd., and County Road 85	Miami County	On-street	3.7	\$470
Miami	Widen shoulders on Washington Rd. between SR 41 and Farrington Rd. (Cardinal Trail)	Miami County	On-street	5.6	\$711
Miami	Widen shoulders on SR 41 between Washington Rd. and Market St.	ODOT, Troy	On-street	3.2	\$218
Montgomery	Construct Iron Horse Trail between Alex Bell Rd. and County Line Rd.	Centerville, Kettering	On-/off-street	6.2	\$1,307
Montgomery	Construct the "SE Corridor" Trail between Kettering and downtown Dayton via former active railroad, Dayton Sewer Access Rd, Univ. of Dayton campus, South Park neighborhood, U.S. 35 bicycle/pedestrian bridge	Kettering, Dayton	On-/off-street	6.5	\$594
Montgomery	Construct Creekside Trail extension roughly paralleling U.S. 35 between the Iron Horse Trail and 4th St. in the Huffman Historic Area	Dayton, Five Rivers MetroParks	Off-street	2.4	\$449
Montgomery	Construct Stillwater Trail between Sinclair Park and Grossnickel Memorial Park	Five Rivers MetroParks	Off-street	4.7	\$2,985
Montgomery	Extend Mad River Bikeway from Eastwood MetroPark to I-70	Five Rivers MetroParks	Off-street	2.3	\$2,461
Montgomery	Retrofit select streets in downtown Dayton to include bike lanes	Dayton	On-street	6.9	\$86

Montgomery	Improve Wolf Creek Trail access from Broadway/Barker St.	Miami Conservancy Dist.	Off-street	0.1	\$25
Montgomery	Construct bicycle/pedestrian facilities along SR 741 between Austin Pike and Alex Bell Rd.	ODOT, Montgomery County	On-/off-street	5.3	\$1,218
Montgomery	Construct on- and off-street bikeway connecting Moraine, West Carrollton, Washington Township, Centerville, and Bellbrook via Cox Arboretum, Yankee Park, Grant Park, Pleasant Hill Park, Forest Walk Park, Black Oak Park, Black Oak East Park, Sugarcreek MetroPark	Five Rivers MetroParks, Moraine, West Carrollton, Centerville, Bellbrook	On-/off-street	10.4	\$1,225
Montgomery	Construct shared use path through future residential area in Miami Township (near Medlar Rd). connecting the Great Miami River Trail with Miamisburg-Springboro Rd.; construct shared use path along Miamisburg-Springboro Rd./Austin Pike/Social Row Rd. between Medlar Rd. and Wilmington-Dayton Rd.; widen shoulders on Ferry Rd./Lytle Rd. between Wilmington-Dayton Rd. and North St. in Corwin; develop signed on-street bikeway along North St./Corwin Rd. to Little Miami Scenic River Trail	Montgomery County	On-/off-street	14.8	\$1,000
Montgomery	Connect Great Miami River Trail with Carriage Trails development (Huber Heights), Carriage Hills MetroPark, and New Carlisle via shared use path between Great Miami River Trail and SR 202, widened shoulders on SR 202, shared use paths through Carriage Trails development, widened shoulders on Palmer Rd., shared use path along former railroad between Palmer Rd. and New Carlisle	ODOT, Miami Conservancy Dist., Miami County, Montgomery County, Huber Heights	On-/off-street	13.7	\$883
Montgomery	Construct bike lanes on Helena St. between Stanley Ave. and Forest Ave., connecting Five Oaks Park with Island MetroPark	Dayton	On-street	0.6	\$5
Montgomery	Conduct trail feasibility study identifying trail corridor linking Carriage Hill MetroPark, Englewood MetroPark, and the Wolf Creek Trail	Miami Conservancy Dist., Five Rivers MetroParks	Feasibility study	N/A	\$50
Montgomery	Improve Wolf Creek Trail access from the Dunbar Bridge	Miami Conservancy Dist.	Off-street	0.1	\$25
Montgomery	Improve Wolf Creek Trail access from Monument and Salem avenues	Miami Conservancy Dist.	Off-street	N/A	\$11
Montgomery	Improve Great Miami River Trail access from Tech Town in downtown Dayton	Miami Conservancy Dist.	Off-street	0.1	\$25
Montgomery	Retrofit Valley St. to include bike lanes between Keowee St. and Stanley Ave.	Dayton	On-street	0.6	\$6

Montgomery	Improve Great Miami River Trail access from Sinclair Comm. College in downtown Dayton	Miami Conservancy Dist.	Off-street	N/A	\$6
Montgomery	Construct on- and off-street bikeway between Iron Horse Park and Bigger Rd.	Montgomery County, Five Rivers MetroParks	On-/off-street	4.6	\$1,038
Montgomery	Retrofit Siebenthaler Ave. to include bike lanes between Salem Ave. and Deweese Pkwy.	Dayton	On-street	2.8	\$191
Montgomery	Widen SR 48 bridge over I-675 to provide sidewalks and bike lanes; shoulder widening on SR 48 between I-675 and Nutt Rd.	ODOT	On-street	0.6	\$392
Montgomery	Improve on-street bikeway connections to Wright-Patterson Air Force Base	ODOT, Montgomery County, Fairborn	On-street	5.0	\$500
Montgomery	Rehabilitate U.S. 35 bicycle/pedestrian bridge between downtown Dayton and South Park neighborhood	ODOT	Off-street	0.3	\$750
Montgomery	Develop transit and on-street links to MetroPark facilities	Five Rivers MetroParks, GDRTA	On-/off-street	Varies	\$500
Montgomery	Improve trail access from Sunrise Park in downtown Dayton	Miami Conservancy Dist.	Off-street	0.1	\$25
Montgomery	Trail infrastructure improvements (trail access, parking, hub facilities)	Montgomery County, Five Rivers MetroParks	Off-street	N/A	\$500
Montgomery	Construct shared use path linking Creekside Trail with Kemp School in Dayton	Dayton	Off-street	0.1	\$16
Montgomery	Construct shared use path along SR 4 between Huffman MetroPark and I-70	Montgomery County, Five Rivers MetroParks	Off-street	5.2	\$1,009
Montgomery	Construct shared use path along Alex-Bell Rd. between SR 48 and Upper Bellbrook Rd.	ODOT	Off-street	4.2	\$1,177
Montgomery	Construct shared use path along Nutt Rd. between Meadow Woods Ln. and Cloy Rd.	Montgomery County	Off-street	1.3	\$206
Montgomery	Construct bike lanes and pedestrian paths on Cloy Rd. between Social Row Rd. and Alex Bell Rd.	Montgomery County, Centerville	On-street	3.6	\$853
Montgomery	Widen shoulders on Union Rd. between Trotwood Blvd. and Germantown Pike	Montgomery County	On-street	8.7	\$1,105
Montgomery	Widen shoulders on Cherry St. and Diamond Hill Rd. between Sycamore State Park and Germantown	Montgomery County, Dayton	On-street	12.5	\$1,588

Warren	Construct Great Miami River Trail between Baxter Drive and Miami River Preserve Park	Franklin, Middletown, Miami Conservancy Dist.	Off-street	2.0	\$1,120
Warren	Construct bike lanes on SR 741 between Springboro High School and Austin Pike	ODOT, Warren County, Springboro	On-street	3.7	\$35
Warren	Construct shared use path along SR 123 between downtown Franklin and Clear Creek; construct shared use path along Clear Creek between SR 123 and Lower Springboro Rd.	ODOT, Warren County	Off-street	3.6	\$571
Warren	Conduct trail feasibility study identifying trail corridor linking Corwin and Harveysburg (including routing through Caesars Creek Preserve)	Warren County	Feasibility study	N/A	\$50
Warren	Construct shared use path paralleling I-75 between SR 73 and Austin Pike	ODOT	Off-street	2.9	\$463
Warren	Widen shoulders on Lower Springboro Rd. between proposed Clear Creek Trail and U.S. 42	Warren County	On-street	7.5	\$953
Warren	Conduct trail feasibility study identifying trail corridor linking Germantown and Carlisle	Warren County	Feasibility study	N/A	\$50
Regional	Trail infrastructure improvements (lighting, trail markings, trail/roadway crossing treatments)	Various	On-/off-street	N/A	\$1,000
Regional	Develop a regional on- and off-street bikeway signage and wayfinding plan	MVRPC	On-/off-street	N/A	\$200
Regional	Develop “complete streets” (e.g., sidewalks, bike lanes) on high-volume roadways	Various	On-street	Varies	\$5,000
Regional	Implement bicycle/pedestrian improvements at Top 5 crash locations	Various	On-street	N/A	\$1,000
Regional	Construct on-street bicycle facilities on roadways yielding on-street bicycle suitability analysis scores of “3” or better <sup>1</sup>	Various	On-street	N/A	\$20,000
Regional	Evaluate greenway/bikeway connection needs	Various	On-/off-street	N/A	\$50

*Note: Projects labeled as “on-/off-street” include both on-street bikeway segments as well as off-street shared use path segments.*

*1 See Chapter 4 for a description and results of the on-street bicycle suitability analysis.*

Table 18 breaks out the Top Priority projects and associated cost opinions. Completion of these initial projects would add approximately 93 new miles of bikeways to the existing local and regional system, at an estimated cost of about \$24 million.

**Table 18: Top Priority Project Cost Opinions**

County	Project	Lead Agency	Facility Type	Approx. Length (miles)	Estimated Cost (thousand)
Greene	Widen shoulders and add sidewalks/pedestrian paths on Grange Hall Rd./National Rd. between Kauffman Ave. and Indian Ripple Rd.	Greene County	Off-street	3.9	\$1,727
Greene	Construct the Three Counties Trail between Wright Brothers-Huffman Prairie Bikeway and Haddix Rd.	Greene County Park Dist.	Off-street	2.3	\$535
Greene	Construct a bicycle/pedestrian bridge over I-675 near Center Park Blvd.	Beavercreek, Fairborn	Off-street	0.5	\$3,000
Greene	Widen shoulders and add sidewalks/pedestrian paths on Shakertown Rd. between County Line Rd. and U.S. 35/Factory Rd.	Greene County	On-street	4.2	\$7,534
Greene	Widen shoulders on Yellow Springs-Fairfield Rd. between Xenia Drive and Little Miami Scenic Trail	Greene County, Fairborn, Yellow Springs	On-street	6.8	\$1,552
Miami	Construct Troy Bike Hub structure	Troy	Off-street	N/A	\$200
Miami	Construct shared use path connecting Treasure Island and Duke Park in Troy	Troy	Off-street	1.0	\$159
Miami	Widen shoulders along SR 55 and SR 589, providing an on-street bikeway linking Troy, Casstown, and Fletcher	ODOT, Miami County	On-street	9.5	\$500
Miami	Construct shared use path roughly paralleling SR 55 between West Milton and Troy	Miami County	Off-street	6.2	\$980
Miami	Construct shared use path between Piqua and Miami/Champaign county line via Garbry's Big Woods Reserve/Sanctuary	Miami County	Off-street	7.2	\$1,142
Montgomery	Construct the "SE Corridor" Trail between Kettering and downtown Dayton via former active railroad, Dayton Sewer Access Rd, Univ. of Dayton campus, South Park neighborhood, U.S. 35 bicycle/pedestrian bridge	Kettering, Dayton	On-/off-street	6.5	\$594
Montgomery	Construct Creekside Trail extension roughly paralleling U.S. 35 between the Iron Horse Trail and 4th St. in the Huffman Historic Area	Dayton, Five Rivers MetroParks	Off-street	2.4	\$449
Montgomery	Retrofit select streets in downtown Dayton to include bike lanes	Dayton	On-street	6.9	\$86
Montgomery	Construct bicycle/pedestrian facilities along SR 741 between Austin Pike and Alex Bell Rd.	ODOT, Montgomery County	On-/off-street	5.3	\$1,218

Montgomery	Construct shared use path through future residential area in Miami Township (near Medlar Rd). connecting the Great Miami River Trail with Miamisburg-Springboro Rd.; construct shared use path along Miamisburg-Springboro Rd./Austin Pike/Social Row Rd. between Medlar Rd. and Wilmington-Dayton Rd.; widen shoulders on Ferry Rd./Lytle Rd. between Wilmington-Dayton Rd. and North St. in Corwin; develop signed on-street bikeway along North St./Corwin Rd. to Little Miami Scenic River Trail	Montgomery County	On-/off-street	14.8	\$1,000
Montgomery	Connect Great Miami River Trail with Carriage Trails development (Huber Heights), Carriage Hills MetroPark, and New Carlisle via shared use path between Great Miami River Trail and SR 202, widened shoulders on SR 202, shared use paths through Carriage Trails development, widened shoulders on Palmer Rd., shared use path along former railroad between Palmer Rd. and New Carlisle	ODOT, Miami Conservancy Dist., Miami County, Montgomery County, Huber Heights	On-/off-street	13.7	\$883
Warren	Construct Great Miami River Trail between Baxter Drive and Miami River Preserve Park	Franklin, Middletown, Miami Conservancy Dist.	Off-street	2.0	\$1,120
Regional	Implement bicycle/pedestrian improvements at Top 5 crash locations	Various	On-street	N/A	\$1,000

Note: Projects labeled as "on-/off-street" include both on-street bikeway segments as well as off-street shared use path segments.

### 8.3.3. Maintenance

On- and off-street bikeways require regular maintenance and repair as needed. On-street bikeways are typically maintained as part of normal roadway maintenance programs, and extra emphasis should be put on keeping bike lanes and roadway shoulders clear of debris and keeping vegetation overgrowth from blocking visibility or creeping into the roadway. Typical maintenance costs for the on-street bikeway facilities are shown in Table 19. Chapter 9 discusses maintenance needs for shared use paths.

**Table 19: Bikeway Maintenance Frequency and Cost Opinions**

Activity	Materials Type	Frequency	Cost Opinion
Pavement resurfacing	Asphalt	Every 20 years	\$15,000/mile
	Concrete	Every 20 years	\$15,000/mile
	Aggregate	Every 3 years	\$3,000/mile
Sign replacement	Worn	Every 10 years	\$30/sign
	Stolen	As needed	\$30/sign
Re-striping	Paint	Every 3 years	\$200/mile
	Move signs, patch and sweep	2 times/year	\$200/mile

Source: Regional Bicycle Transportation Facilities Plan, Mid-Ohio Regional Planning Commission, 2003. Costs have been escalated to 2007 dollars.

### 8.3.4. Education, Encouragement, Enforcement

Discussed in Chapter 6 of this Plan, education, encouragement and enforcement programs vary significantly in cost depending on the extent of the program. This Plan recommends that MVRPC secure funding to support approximately \$500,000 for these programs over the first five years of Plan implementation, with a goal of developing a \$500,000 annual budget for education, encouragement, and enforcement programs beyond this period.

## 8.4. FUNDING SOURCES

The primary federal source of surface transportation funding – including bicycle facilities – is SAFETEA-LU, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users. SAFETEA-LU is the fourth in a series of federal transportation funding bills. The \$286.5 billion SAFETEA-LU bill, passed in 2005, authorizes federal surface transportation programs for the five-year period between 2005 and 2009.

SAFETEA-LU information can be found at: [www.fhwa.dot.gov/safetealu/index.htm](http://www.fhwa.dot.gov/safetealu/index.htm)

Federal funding is administered through the Ohio Department of Transportation (ODOT) and MVRPC. Most but not all funding programs are transportation (versus recreation) oriented, with an emphasis on (a) reducing auto trips and (b) providing inter-modal connections. Funding criteria often requires quantification of costs and benefits of the system (such as saved vehicle trips and reduced air pollution), proof of public involvement and support, and commitment of some local resources. In most cases, SAFETEA-LU provides matching grants of 80 to 90 percent – but prefers to leverage other funds at a lower rate. Specific grants available from SAFETEA-LU are described more in the regional sections because MVRPC screens the applications and provides the funds.

MVRPC's TIP is a list of projects eligible for Federal aid. Bikeway projects must be listed on MVRPC's Regional Bikeway Plan in order to receive Federal SAFETEA funds.

Specific programs funded under SAFETEA-LU include: Congestion Mitigation and Air Quality, Recreational Trails Program, Safe Routes to Schools Program, Transportation, Community and System Preservation Program, and Federal Lands Highway Funds. These funding sources are described below.

In addition to these standard funding sources, Federal transportation funding includes "Demonstration Projects." These are the line-item projects added by members of Congress.

Cities and counties in Miami Valley may be candidates for this type of funding during the SAFETEA re-authorization process in 2009-10. During the last reauthorization process, a \$100 million Model Communities Program was established to demonstrate how bicycle and pedestrian infrastructure, and education and encouragement programs can be used to increase bicycling and walking. Four communities, Columbia, Missouri; Marin County, California; Sheboygan, Wisconsin and Minneapolis, Minnesota each received \$25 million to implement bicycle and pedestrian projects. This program may be expanded in the future and would be a great opportunity for Miami Valley communities.

### 8.4.1. Statewide Funding Sources

The State of Ohio uses both Federal sources and its own budget to fund bicycle projects and programs. In some cases, project sponsors apply directly to the State for funding. In others, sponsors apply to the regional agency, MVRPC.

## Recreational Trails Program

Eligible projects for the Recreational Trails Program include trail linkages, facilities, maintenance, restoration, ADA improvements, acquisition, and construction. The Recreational Trails Program is up to 80 percent reimbursable and in the 2007 fiscal year, the State of Ohio was apportioned \$1,740,801. The deadline for the application is February 1.

[www.fhwa.dot.gov/environment/rectrails/index.htm](http://www.fhwa.dot.gov/environment/rectrails/index.htm)

## Clean Ohio Trails Fund

In Ohio, the Clean Ohio Trails Fund was available for four rounds of funding and ended in 2006. At this time, there is no funding available, however there is a considerable push to have the fund put on the ballot again for reauthorization. The grants were administered by the Ohio Department of Natural Resources and totaled \$25 million over the four cycles.

<http://www.dnr.state.oh.us/default/tabid/10771/Default.aspx>

## NatureWorks Grants

The NatureWorks grant program is administered by the Ohio Department of Natural Resources. The grants provide up to 75 percent reimbursement assistance for local governments, including cities and park districts. Grants are for acquiring, developing, and rehabilitating recreational areas and are applicable to bicycle trails. The program started in 1993 and since then, it has funded over \$63 million in projects. Over the last several years, the NatureWorks grants have funded approximately \$2 million in projects per year. The deadline is February 1.

<http://www.dnr.state.oh.us/default/tabid/11089/Default.aspx>

## Land and Water Conservation Fund

The Land and Water Conservation Fund is a Federal program providing grants for planning and acquiring outdoor recreation areas and facilities, including trails. The Fund is administered by the Ohio Department of Natural Resources. Congress has yet to determine whether this program will be funded in 2008.

Cities, counties and districts authorized to acquire, develop, operate and maintain park and recreation facilities are eligible to apply. Applicants must fund the entire project, and will be reimbursed for 50 percent of costs. The grant process for local agencies is competitive and if funding levels are like previous years, there will be a \$50,000 maximum grant request.

<http://www.dnr.state.oh.us/default/tabid/11089/Default.aspx>

## Safe Routes to Schools (SR2S)

Recent SAFETEA-LU legislation, which requires each state's Department of Transportation to designate a Safe Routes to Schools Coordinator, also contains a SR2S program. This program is meant to improve the safety of walking and bicycling to school, and to encourage students to walk and bicycle to school through bicycle safety and traffic calming projects. ODOT requires a Comprehensive Safe Routes to Schools Plan to be eligible for funding. The next round of funding will likely take place in January 2009.

<http://www.dot.state.oh.us/SafeRoutes/Default.htm>

## 8.4.2. Regional Funding Sources

Regional transportation funds are administered by MVRPC. Sponsors using local, state, or other federal Funds are encouraged but not required to accommodate bicycles and pedestrians in the planning and design of all proposed transportation projects.

### Transportation Improvement Program

In 2007, the State of Ohio awarded approximately \$1.5 billion in funds for highway, transit, and bicycle/pedestrian projects for FY 2008-2011. Projects programmed in the Transportation Improvement Program must provide for public comment to the funding list, provide specific project information, be consistent with planning documents, provide a financial plan, establish priorities, and conform to air quality standards. Therefore, when funding becomes available, the project will be ready for implementation.

<http://www.mvrpc.org/tr/tiphome.php>.

### Transportation Enhancements

Transportation Enhancements (TE) are designated SAFETEA-LU funds. MVRPC solicits applications and funds regional projects and programs with these dollars. The TE program provides for the implementation of various nontraditional projects, with examples ranging from the restoration of historic transportation facilities, to bicycle and pedestrian facilities, to landscaping and scenic beautification, and mitigate water pollution from highway runoff. In 2006, MVRPC awarded nearly \$2.5 million in TE funds. In 2007, MVRPC received requests in excess of \$6 million for projects.

<http://www.mvrpc.org/tr/te.php>

[http://www.fhwa.dot.gov/environment/te/principles\\_pt1.htm](http://www.fhwa.dot.gov/environment/te/principles_pt1.htm)

### Congestion Mitigation and Air Quality (CMAQ)

CMAQ funds are allocated as part of SAFETEA-LU, and MVRPC solicits applications and uses these dollars to fund projects. In 2006, MVRPC awarded nearly \$12 million for CMAQ projects. In 2007, MVRPC received CMAQ applications totaling more than \$20 million. Bicycle and pedestrian facilities are eligible for these funds if they provide air quality benefits.

[http://www.mvrpc.org/tr/stp\\_cmaq.php](http://www.mvrpc.org/tr/stp_cmaq.php)

<http://www.fhwa.dot.gov/environment/cmaqpgs/>

## 8.4.3. Other Funding Sources

### Integration into Larger Projects

One of the most effective ways of getting bicycle facilities constructed quickly is to ensure that proposed facilities are constructed as part of larger transportation projects. As communities adopt “Complete Streets” policies, bicycle and pedestrian facilities can be incorporated into the modified transportation network. If MVRPC adopts the complete streets policy outlined in this Plan, bicycle facility construction in the Miami Valley region should increase significantly.

### Community Development Block Grants

The Community Development Block Grant (CDBG) program provides money for streetscape revitalization, which may be largely comprised of bicycle and pedestrian improvements. Federal Community Development

Block Grant recipients may use CDBG funds for activities including (but are not limited to) acquiring real property; building public facilities and improvements, such as streets, sidewalks, and recreational facilities; and planning and administrative expenses, such as costs related to developing a consolidated Plan and managing CDBG funds. CDBG funds totaling \$50 million were distributed statewide in 2007.

## **Impact Fees**

System Development Charges (SDCs), also known as Developer Impact Fees, represent another potential local funding source. SDCs are typically tied to trip generation rates and traffic impacts produced by a proposed project. A developer may reduce the number of trips (and hence impacts and cost) by paying for on- or off-site pedestrian improvements encouraging residents to walk, bicycle, or use transit rather than drive. In-lieu parking fees may be used to help construct new or improved pedestrian facilities. Establishing a clear nexus or connection between the impact fee and the project's impacts is critical to avoiding a potential lawsuit.

## **Local Bond Measures**

Local bond measures, or levies, are usually initiated by voter-approved general obligation bonds for specific projects. Bond measures are typically limited by time based on the debt load of the local government or the project under focus. Funding from bond measures can be used for right-of-way acquisition, engineering, design and construction of pedestrian and bicycle facilities.

## **Tax Increment Financing/Urban Renewal Funds**

Tax Increment Financing (TIF) is a tool that uses future gains in taxes to finance current improvements that will create those gains. When a public project (e.g., sidewalk improvements) is constructed, surrounding property values generally increase and encourage surrounding development or redevelopment. The increased tax revenues are then dedicated to finance the debt created by the original public improvement project. Tax Increment Financing typically occurs within designated Urban Renewal Areas (URA) that meets certain economic criteria and approved by a local governing body. To be eligible for this financing, a project (or a portion of it) must be located within the URA.

## **Street User Fees**

Local Miami Valley communities could administer street user fees through residents' monthly water or other utility bills. The revenue generated by the fee could be used for operations and maintenance of the street system, with priorities established by the Public Works Department. Revenue from this fund could be used to maintain on-street bicycle facilities, including routine sweeping of bicycle lanes and other designated bicycle routes.

## **Local Improvement Districts**

Local Improvement Districts (LIDs) are most often used by cities to construct localized projects such as streets, sidewalks or bikeways. Through the LID process, the costs of local improvements are generally spread out among a group of property owners within a specified area (with the City providing a predetermined match). The cost can be allocated based on property frontage or other methods such as trip generation.

## **Business Improvement Districts**

Bicycle improvements can often be included as part of larger efforts aimed at business improvement and retail district beautification. Business Improvement Districts collect levies on businesses in order to fund area-wide improvements that benefit businesses and improve access for customers. These districts may

include provisions for pedestrian and bicycle improvements, such as bike parking, wider sidewalks, landscaping, and ADA compliance.

### **American Greenways Program**

Administered by The Conservation Fund, the American Greenways Program provides funding for the planning and design of greenways. Grant applications can be submitted by local, regional or statewide non-profit organizations and public agencies. The maximum award is \$2,500, but most awards range from \$500 to \$1,500. American Greenways Program monies may be used to fund unpaved trail development.

### **Volunteer Efforts**

Residents and other community members are excellent resources for garnering support and enthusiasm for bicycle facilities, and MVRPC and local agencies should work with volunteers to substantially reduce implementation and maintenance costs. Local schools, community groups, or a group of dedicated neighbors may use the project as a project for the year, possibly working with a local designer or engineer. Work parties can be formed to help clear the right-of-way for a new trail or maintain existing facilities where needed. A local construction company could donate or discount services. Other opportunities for implementation will appear over time, such as grants and private funds. Miami Valley communities should look to residents for additional funding ideas to expedite completion of the bicycle system.

## **8.5. ESTIMATED FUTURE FUNDS THROUGH 2018**

Tables 20 and 21 summarize the available funding sources that Miami Valley communities can use to construct bicycle facilities and develop programs over the next ten years (the recommended timeframe associated with full implementation of the Top Priority Projects). Over the ten-year period between 2008 and 2018, approximately \$75.2 million is available for constructing on-street bicycle facilities, \$77.8 million for constructing shared use paths, and approximately \$1.2 million education and encouragement programs.<sup>4</sup>

Funding source availability may vary from that shown in the tables, depending on how the State, MVRPC and local communities apportion funding. These funds are generally available for environmental, feasibility, design, preliminary engineering and construction of bicycle facilities. Funds cannot be used to pay for a bicycle coordinator position, but some funding sources allow a portion of the monies to be used to administer the development and construction of specific bicycle facilities. It may be possible for MVRPC or local communities to receive enough grant funding to hire part-time or full-time staff to administer development and construction of all grant-funded bicycle projects.

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<sup>4</sup> This funding is not guaranteed, however. Agencies will have to compete for some of the funding.

**Table 20: 2008-2018 Bicycle Funding Sources**

Agency	Total Available Source Funding		Total Possible Funding for Cyclists in Miami Valley		Methodology
	2008-2013	2008-2018	2008-2013	2008-2018	
MVRPC Congestion Mitigation and Air Quality (CMAQ) (Non SOV Modes) 25% On-street 75% Off-street	\$28.6 M Miami Valley Region	~\$57 M	\$4 M	~\$8 M	Bicycle facility funding is estimated at 14.1% of the minimum apportionment. <sup>1</sup> *2008-2018 funding estimate assumes a continuation of MVRPC funding.
Recreational Trails Program 100% off-street	\$8.5 M Ohio	N/A	\$600,000	N/A	The State of Ohio was apportioned \$1.7 M for the 2007 FY. <sup>1</sup> Funding is available until 2009.
Clean Ohio Trails Fund	\$31.2 M Ohio	\$62.5 M Ohio	\$1 M	\$2 M	Assumes funding will be reauthorized in 2008 at \$6.25 million per year, with the region receiving approximately \$200,000 per year.
Safe Routes to School Program 30% On-street 60% Off-street 10% Programs	\$5.3 M Ohio	\$10.6 M Ohio (estimated)	\$168,000	\$336,550	The Ohio apportionment totaled \$5.3 M for FY 2008. Funding is available until 2009.1,2
Transportation, Community and System Preservation Program 50% On-street 50% Off-street	\$122.5 M Nationwide	\$122.5 M Nationwide	~\$393,000	~\$786,000	\$122.5 M is available through nationwide discretionary grants until 2009. The average 2007 funding award was \$7.9 M. Funding for bicycle facilities is estimated at 5% of total funds.
NatureWorks Grants 50% On-Street 50% Off-Street	\$10 M Ohio	\$20 M	~\$91,555	~\$183,110	Awards equal \$2 M per year. The average grant award is \$18,311, which is used to estimate the possible funding available for the MVRPC region.
Transportation Improvement Program 50% On-street 50% Off-street	\$2.5 B Statewide	~\$5 B	\$19.9 M	\$39.8 M	Statewide funding total is \$1.5 B for FY 2008-2011. <sup>2</sup> Funding for bicycle facilities is estimated at 5% of total funds.
Transportation Enhancements 33% On-street 33% Off-street	\$7.4 M Miami Valley Region	\$14 M Miami Valley Region (estimated)	\$740,000	\$1.4 M	Based on Table 4.7 in the MVRPC TIP with 14% going to bikeways.

33% Programs					
Private Sector “Adopt a Bikeway” Assumes 10% for programs	\$1 M	\$4 M	\$1 M	\$4 M	Assumes this Plan’s recommendation to establish an “adopt-a-bikeway” or other philanthropic organization is met.
Five Rivers MetroParks Funding	\$5 M	\$10 M	\$5 M	\$10 M	Estimates based on past Five Rivers MetroParks trails funding.

1 *Approximately 14.1% of the 2005 funding went to bike facilities. Source: [http:// docs.mvrpc.org/trCMAQ/2005CMAQApproved.pdf](http://docs.mvrpc.org/trCMAQ/2005CMAQApproved.pdf).*

2 *The population in the MVRPC region is 7% of the State population, which is used to obtain a rough estimate of the MVRPC fund apportionment.*

**Table 21: Total Estimated Available Funding, 2008-2018**

Eligible Projects	2008-2013	Total 10-Year Funding 2008-2018
On-Street Bikeways	\$43.3 M	\$75.2 M
Off-Street Bikeways	\$44.8 M	\$77.8 M
Education, Encouragement and Enforcement Programs	\$640,010	\$1,266,755
Total	\$88.8 M	\$154.3 M

## 8.6. IMPLEMENTATION STRATEGIES

The Comprehensive Local-Regional Bikeways Plan provides the long-term vision for the development of a region-wide bikeway network that can be used by all residents for all types of trips. Implementation of the Plan will take place in small steps over many years. The following strategies, action items, and measures of effectiveness are provided to guide the MVRPC region, in particular, local communities toward the vision identified in the Plan.

### Strategy 1: Strategically Pursue Infrastructure Projects

Local community staff should strategically pursue infrastructure projects within their respective jurisdictions. Ideally, staff should pursue capital improvements funding or grant funding for high priority bicycle and pedestrian improvements first. However, if grant requirements, or construction in conjunction with another roadway project make construction of a lower priority project possible, then the community should pursue funding sources for that project regardless of priority. Additionally, regardless of the priority placed upon a bicycle or pedestrian project, it is intended that an approved bicycle or pedestrian project be installed simultaneous to road improvements projects scheduled in the same area.

#### Action Item:

At the end of each fiscal year, local communities should publish a public report documenting the status and on-going actions for all bicycle and pedestrian projects. This report may be combined with the prioritization review discussed below.

## **Strategy 2: Regularly Revisit Project Prioritization**

Projects have been prioritized based on transportation benefit, regional connectivity benefit, cost, safety, feasibility, and other criteria described in Chapter 5. This list should be reviewed every fiscal year, with new projects added, completed projects removed, and the priorities revised as conditions change.

### **Action Item:**

Annual review and update of bikeway project list with input from appointed persons within the local communities, Miami Conservancy District, and other relevant agencies. The updated list should be shared with the public.

## **Strategy 3: Update the Plan**

While this Plan is intended to guide the bicycle planning in the Miami Valley region for the next 20 years, it should be reviewed and updated on a regular basis. The Plan should be reviewed every five years and updated as needed.

### **Action Item:**

Review and update the Comprehensive Local-Regional Bikeways Plan every five years.

## **Strategy 4: Integrate Bicycle Planning into the Local Agency Planning Processes**

This Plan presents a vision for the future of bicycling in the Miami Valley region. To ensure that that vision is implemented, the Plan must become a living document that is incorporated into the day-to-day activities of planning, design, funding, construction and maintaining infrastructure in the local communities. This plan recommends several ways for bicycle planning to be integrated into the local community process:

### **Action Items:**

Incorporate a bicycle facilities checklist into the Plan review process.

Adopt bicycle parking ordinances and other local agency policies that promote bicycling.

MVRPC and local jurisdictions should adopt “Complete Streets” policies to ensure that bicycle and pedestrian facilities are included in all major construction and reconstruction projects. Bicycle and pedestrian facilities should be addressed at the project scoping stage.

## **Strategy 5: Encourage Private Donors to Support the Bikeway System**

Through an “Adopt a Bikeway” program, corporations, institutions and individual private donors can support the existing and proposed bikeway system. This program can be leveraged to enhance maintenance through volunteer work, and can connect philanthropy with fundraising to sustain the system.

### **Action Item:**

Evaluate opportunities for establishing a philanthropic giving program that can be used to support the construction and maintenance of the region’s bikeways.

## **Strategy 7: Evaluate the Progress toward Becoming a World-Class Bicycling Region**

Measures of effectiveness are used as a qualitative way to measure the region’s progress toward implementing the Comprehensive Local-Regional Bikeways Plan and becoming a world-class bicycling destination. Well-

crafted measures of effectiveness measure progress toward meeting an agreed-upon goal, include measurable indicators of progress, and include time-sensitive targets for the Miami Valley region to meet.

Table 22 describes several measures that MVRPC and local jurisdictions may consider. Baseline conditions should be established and goal targets should be developed based on reasonable expectations within the time frame. As new baseline information is discovered as conditions change, and as MVRPC implements more elements of the Bikeways Plan, the measures of effectiveness should be reevaluated, revised and updated. MVRPC and local communities should regularly review the progress made toward these targets, preferably on an annual or biennial basis.

The City of Santa Monica, California has been using measures of effectiveness (“indicators”) since 1994 to measure the progress the City has made toward becoming sustainable. Jurisdictions within Miami Valley should consider reviewing Santa Monica’s sustainability report card and sustainability indicators as a guide for developing their own measures of effectiveness. Santa Monica provides its Sustainability Progress Report online at [www.smgov.net/epd/scpr/index.htm](http://www.smgov.net/epd/scpr/index.htm)

**Table 22: Potential Measures of Effectiveness**

Measure	Potential Target
Number of bikeway projects completed	Complete Top Priority projects identified in the Bikeways Plan in the next ten years. Complete High Priority projects within 20 years, based on available funding and project costs.
Bicycle mode share	Increase the mode share of trips made by bicycling in Miami Valley to ten percent of all trips in ten years.
Trail use	Increase the number of trail users by 10% per year as measured through annual count data.
Number of collisions between bicyclists and motorists	Reduce the number of injuries and fatalities by ten percent by 2013, and maintain a crash rate (number of crashes in relation to bicyclist mode share) that is the same as or lower than the expected crash rate for a region similar in population to Miami Valley. Routinely identify areas with high numbers of bicycle crashes on roadways and the bikeway system and develop the means to mitigate the problem.
Grant funding received for bikeway projects	Receive an annual average of \$500,000 or more in non-motorized transportation grants.
Percentage of community with access to bicycle facility	90% of residents live within ½ mile of a designated bicycle facility by 2018.
Public attitudes about bicycling in Miami Valley	Increase in positive attitudes about bicycling and about bicycle facilities.
Public attitudes toward bicyclists from motorists	Increase in positive attitudes toward bicyclists from motorists.
Proportion of Arterial streets with bike lanes	Increase in the proportion of Arterial streets with bicycle facilities. Suggested target of 25% of all roadway miles by 2018 to spur greater bicycle commuting.
Independent recognition of Miami Valley’s efforts to promote bicycling	Independent recognition of efforts to promote bicycling by 2013. League of American Bicyclists’ Bronze Award by 2013 and Silver or Gold Award by 2018