

**PROJECT # 1902-230 PROJECT NAME: SPANISH VALLEY DRIVE MULTI-USE PATH  
Cost Estimate - Concept Level**

**Prepared By:** Trent **Date** 7/8/2019

**Proposed Project Scope:** Spanish Valley Drive Multi-Use Path

Approximate Route Reference (BEGIN) =	E Millcreek Dr.	(END) =	San Juan County Line
Project Length =	5.205 miles		27,480 ft
Current FY Year (July-June) =	2019		
Assumed Construction FY Year =	2021		
Construction Items Inflation Factor =	1.10	2 yrs for inflation	
Assumed Yearly Inflation for Engineering Services (PE and CE) (%/yr) =	3.25%		
Assumed Yearly Inflation for Right of Way (%/yr) =	4.0%		
Items not Estimated (% of Construction) =	20.0%		
Preliminary Engineering (% of Construction + Incentives) =	8.0%		
Construction Engineering (% of Construction + Incentives) =	8.0%		

this might be too high, see what it comes out to

Construction Items	Cost	Remarks
Public Information Services	\$5,200	
Roadway and Drainage	\$1,418,284	
Traffic and Safety	\$41,380	
Structures	\$761,500	
Environmental Mitigation	\$5,000	
	Subtotal	
	\$2,231,364	
	Items not Estimated (20%)	
	\$446,273	
	<b>Construction Subtotal</b>	
	<b>\$2,677,637</b>	
P.E. Cost	P.E. Subtotal	8%
	<b>\$214,211</b>	
C.E. Cost	C.E. Subtotal	8%
	<b>\$214,211</b>	
Right of Way	Right of Way Subtotal	
	\$205,700	
Utilities	Utilities Subtotal	
	\$100,000	
Miscellaneous	Miscellaneous Subtotal	
	\$0	

Cost Estimate (ePM screen 505)	2019	2021
P.E.	\$214,000	\$228,000
Right of Way	\$206,000	\$222,000
Utilities	\$100,000	\$110,000
Construction	\$2,678,000	\$2,952,000
C.E.	\$214,000	\$228,000
Aesthetics	0.75% \$20,000	\$22,000
Change Order Contingency	9.00% \$243,000	\$268,000
UDOT Oversight	5.00% \$151,000	\$166,000
Miscellaneous	\$0	\$0
<b>TOTAL</b>	<b>\$3,826,000</b>	<b>\$4,196,000</b>
PER LINEAR FOOT COST	\$139.23	\$152.69
<b>PROPOSED COMMISSION REQUEST</b>	<b>TOTAL \$3,826,000</b>	<b>TOTAL \$4,196,000</b>

**Project Assumptions/Risks**

- |         |          |
|---------|----------|
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| 6 _____ | 13 _____ |
| 7 _____ | 14 _____ |

# Inflation

JECT # 1902-230 PROJECT NAME: SPANISH VALLEY DRIVE MULTI-USE F

Year	Rate	Recommended Rate	Cumulative Inflation Factor
2019	6.5%	0.0%	1.00
2020	5.5%	5.5%	1.06
2021	4.5%	4.5%	1.10
2022	4.0%	4.0%	1.15
2023	3.5%	3.5%	1.19
2024	3.5%	3.5%	1.23
2025	3.5%	3.5%	1.27
2026	3.5%	3.5%	1.32
2027	3.5%	3.5%	1.36
2028	3.5%	3.5%	1.41
2029	3.5%	3.5%	1.46
2030	3.5%	3.5%	1.51
2031	3.5%	3.5%	1.56
2032	3.5%	3.5%	1.62
2033	3.5%	3.5%	1.67
2034	3.5%	3.5%	1.73
2035	3.5%	3.5%	1.79
2036	3.5%	3.5%	1.86
2037	3.5%	3.5%	1.92
2038	3.5%	3.5%	1.99
2039	3.5%	3.5%	2.06
2040	3.5%	3.5%	2.13
2041	3.5%	3.5%	2.20
2042	3.5%	3.5%	2.28
2043	3.5%	3.5%	2.36
2044	3.5%	3.5%	2.44
2045	3.5%	3.5%	2.53
2046	3.5%	3.5%	2.62
2047	3.5%	3.5%	2.71
2048	3.5%	3.5%	2.80

Please contact UDOT Estimate Support with any questions (801-965-4708).

# Roadway and Drainage

PROJECT # 1902-230 PROJECT NAME: SPANISH VALLEY DRIVE MULTI-USE PATH

Item	Quantity	Units	Price	Cost	Remarks
Mobilization	1	lump	\$207,804.00	\$207,804.00	Usually 7-10% of construction
Traffic Control	1	lump	\$103,910.00	\$103,910.00	Usually 3-5% of construction
Maintenance of Traffic	1	lump	\$20,780.00	\$20,780.00	Usually 1% of construction
Dust Control and Watering	1	lump	\$20,000.00	\$20,000.00	
Borrow	4,242	ton	\$35.00	\$148,470.00	
Remove Fence	7,215	foot	\$3.00	\$21,645.00	
Remove Pipe	400	foot	\$15.00	\$6,000.00	
Clearing and Grubbing	1	lump	\$15,000.00	\$15,000.00	
Roadway Excavation	1,500	cu yd	\$30.00	\$45,000.00	
Untreated Base Course	6,933	ton	\$25.00	\$173,325.00	
HMA - 1/2 Inch	3,638	ton	\$120.00	\$436,560.00	
Concrete Valley Gutter	4,350	sq ft	\$10.00	43500	
Landscape Repair	41,500	sq ft	\$2.00	\$83,000.00	
Fence	7,215	foot	\$6.00	\$43,290.00	
				<b>\$1,368,284</b>	
Loose Riprap	100	cubic yard	\$300.00	\$30,000.00	
Drainage Pipe - 18 inch, Smooth, Leak-Resistant	400	foot	\$50.00	\$20,000.00	
				<b>\$50,000</b>	
Public Information Services	1	lump	\$5,200.00	<b>\$5,200</b>	Usually 0.25% of construction

# Traffic, Safety & ITS

PROJECT # 1902-230 PROJECT NAME: SPANISH VALLEY DRIVE MULTI-USE PATH

Item	Quantity	Units	Price	Cost	Remarks
Pavement Marking Paint	668	gallon	\$35.00	\$23,380.00	
Pavement Message	10	each	\$200.00	\$2,000.00	
Sign Type A-1, 12 Inch X 36 Inch	20	each	\$500.00	\$10,000.00	
Relocate Sign Less Than 20 Square Feet	20	each	\$300.00	\$6,000.00	
				<b>\$41,380</b>	

# Structures

PROJECT # 1902-230 PROJECT NAME: SPANISH VALLEY DRIVE MULTI-USE PATH

Item	Quantity	Units	Price	Cost	Remarks
New Structure	1	lump sum	\$114,000.00	\$114,000.00	
Retaining Wall	3,700	foot	\$175.00	\$647,500.00	Assumed Length, 7' tall
				<b>\$761,500</b>	

# Environmental and Landscaping

PROJECT # 1902-230 PROJECT NAME: SPANISH VALLEY DRIVE MULTI-USE PATH

Item	Quantity	Units	Price	Cost	Remarks
Broadcast Seed	3	acre	\$2,000.00	\$5,000.00	
				<b>\$5,000</b>	

# Utilities, Right of Way, and Incentives

PROJECT # 1902-230 PROJECT NAME: SPANISH VALLEY DRIVE MULTI-USE PATH

Item #	Item	Quantity	Units	Price	Cost	Remarks
<b>Utilities</b>						
	Relocate Utilities	1	Lump	\$100,000.00	\$100,000.00	
<b>Utilities Subtotal</b>					<b>\$100,000</b>	
<b>Right-of-way</b>						
	Urban/Suburban Residential	51,425	sq ft	\$4.00	\$205,700.00	
<b>Right-of-Way Subtotal</b>					<b>\$205,700</b>	

Cost Estimate Summary of Assumptions  
 PROJECT # 150-030 PROJECT NAME: SPANISH VALLEY DRIVE MULTIPHASE PATH

**Material Assumptions**

Item	Unit	Quantity	Assumption/Notes
Concrete	YD	100	
Asphalt	YD	100	
Gravel	YD	100	
Earthwork	YD	100	
Water	YD	100	
Subgrade	YD	100	
Aggregate	YD	100	
Structural Steel	YD	100	
Reinforcing Steel	YD	100	
Formwork	YD	100	
Excavation	YD	100	
Backfill	YD	100	
Sealing	YD	100	
Paint	YD	100	
Other	YD	100	

**Sub**

Subcategory	Material	Quantity	Unit	Notes
Subcategory 1	Material 1	100	YD	
Subcategory 1	Material 2	100	YD	
Subcategory 1	Material 3	100	YD	
Subcategory 1	Material 4	100	YD	
Subcategory 1	Material 5	100	YD	
Subcategory 1	Material 6	100	YD	
Subcategory 1	Material 7	100	YD	
Subcategory 1	Material 8	100	YD	
Subcategory 1	Material 9	100	YD	
Subcategory 1	Material 10	100	YD	
Subcategory 1	Material 11	100	YD	
Subcategory 1	Material 12	100	YD	
Subcategory 1	Material 13	100	YD	
Subcategory 1	Material 14	100	YD	
Subcategory 1	Material 15	100	YD	
Subcategory 1	Material 16	100	YD	
Subcategory 1	Material 17	100	YD	
Subcategory 1	Material 18	100	YD	
Subcategory 1	Material 19	100	YD	
Subcategory 1	Material 20	100	YD	

Print on 11x17 - adjust print layout after collaborative adjustments are completed.

Choice Either: Ton or Yd  
 Material Point  
 Linked to Row(s) Item

This section estimates the quantity per foot of line. Unit must match unit of line. Units are: cubic yard, square yard.

**Parameters**

Section	Length	Width	Depth	Volume	Material	Unit	Notes
Section 1	100	10	2	2000	Asphalt	YD	
Section 2	100	10	2	2000	Concrete	YD	
Section 3	100	10	2	2000	Gravel	YD	
Section 4	100	10	2	2000	Earthwork	YD	
Section 5	100	10	2	2000	Water	YD	
Section 6	100	10	2	2000	Subgrade	YD	
Section 7	100	10	2	2000	Aggregate	YD	
Section 8	100	10	2	2000	Structural Steel	YD	
Section 9	100	10	2	2000	Reinforcing Steel	YD	
Section 10	100	10	2	2000	Formwork	YD	
Section 11	100	10	2	2000	Excavation	YD	
Section 12	100	10	2	2000	Backfill	YD	
Section 13	100	10	2	2000	Sealing	YD	
Section 14	100	10	2	2000	Paint	YD	
Section 15	100	10	2	2000	Other	YD	

**Volume of job**

Material	Quantity	Unit	Notes
Asphalt	100	YD	
Concrete	100	YD	
Gravel	100	YD	
Earthwork	100	YD	
Water	100	YD	
Subgrade	100	YD	
Aggregate	100	YD	
Structural Steel	100	YD	
Reinforcing Steel	100	YD	
Formwork	100	YD	
Excavation	100	YD	
Backfill	100	YD	
Sealing	100	YD	
Paint	100	YD	
Other	100	YD	

**Earthwork**

Section	Material	Quantity	Unit	Notes
Section 1	Asphalt	100	YD	
Section 2	Concrete	100	YD	
Section 3	Gravel	100	YD	
Section 4	Earthwork	100	YD	
Section 5	Water	100	YD	
Section 6	Subgrade	100	YD	
Section 7	Aggregate	100	YD	
Section 8	Structural Steel	100	YD	
Section 9	Reinforcing Steel	100	YD	
Section 10	Formwork	100	YD	
Section 11	Excavation	100	YD	
Section 12	Backfill	100	YD	
Section 13	Sealing	100	YD	
Section 14	Paint	100	YD	
Section 15	Other	100	YD	

**Water**

Material	Quantity	Unit	Notes
Water	100	YD	
Subgrade	100	YD	
Aggregate	100	YD	
Structural Steel	100	YD	
Reinforcing Steel	100	YD	
Formwork	100	YD	
Excavation	100	YD	
Backfill	100	YD	
Sealing	100	YD	
Paint	100	YD	
Other	100	YD	

**Parameters Metrics Pans**

Section	Length	Width	Depth	Volume	Material	Unit
Section 1	100	10	2	2000	Asphalt	YD
Section 2	100	10	2	2000	Concrete	YD
Section 3	100	10	2	2000	Gravel	YD
Section 4	100	10	2	2000	Earthwork	YD
Section 5	100	10	2	2000	Water	YD
Section 6	100	10	2	2000	Subgrade	YD
Section 7	100	10	2	2000	Aggregate	YD
Section 8	100	10	2	2000	Structural Steel	YD
Section 9	100	10	2	2000	Reinforcing Steel	YD
Section 10	100	10	2	2000	Formwork	YD
Section 11	100	10	2	2000	Excavation	YD
Section 12	100	10	2	2000	Backfill	YD
Section 13	100	10	2	2000	Sealing	YD
Section 14	100	10	2	2000	Paint	YD
Section 15	100	10	2	2000	Other	YD

**Parameters Metrics Application Rates**

Material	Application Rate	Unit
Asphalt	100	YD
Concrete	100	YD
Gravel	100	YD
Earthwork	100	YD
Water	100	YD
Subgrade	100	YD
Aggregate	100	YD
Structural Steel	100	YD
Reinforcing Steel	100	YD
Formwork	100	YD
Excavation	100	YD
Backfill	100	YD
Sealing	100	YD
Paint	100	YD
Other	100	YD

**Misc. Area Calculator**

Area Location	Length	Width	Total Area	Notes
Area 1	100	10	1000	
Area 2	100	10	1000	
Area 3	100	10	1000	

**Misc. Volume Calculator**

Volume Location	Length	Width	Depth	Total Volume	Notes
Volume 1	100	10	2	2000	
Volume 2	100	10	2	2000	
Volume 3	100	10	2	2000	

**Project Assumptions/Risks**

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1 Estimate does not include storm water system improvement costs

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### Incentives Calculator

PROJECT # 1902-230 PROJECT NAME: SPANISH VALLEY DRIVE MULTI-USE PATH

2017 Specification	Incentive	Quantity	Unit	Max Unit Incentive	Max Incentive	Adjustment Factor	Assumed Incentive	Remarks
02701 - Smoothness	See below - Section 1.8	1	Lump	\$0.00	\$0.00	0.75	\$0.00	Use the Calculations below
00221S - Bidding Contract Time	Early Completion Incentive - Section 1.7.D.4		Ca/d		\$0.00	1	\$0.00	
00222S - Lane Rental	Lane Rental Incentive - Section 1.8.B.1		Hours		\$0.00	1	\$0.00	
02741 - HMA	In Place Mat Density - Section 1.6.D.1	3,638	Ton	\$2.00	\$7,276.00	0.85	\$6,184.60	
	Gradition/Asphalt Content - Section 1.6.D.1	3,638	Ton	\$2.00	\$7,276.00	0.85	\$6,184.60	
	Joint Density - Section 1.6.D.6	3,638	Ton	\$2.00	\$7,276.00	0.85	\$6,184.60	
02744 - SMA	Asphalt Binder Content & Density - Section 1.6.D.1	0	Ton	\$2.50	\$0.00	0.50	\$0.00	
	Gradation - Section 1.6.D.1	0	Ton	\$2.50	\$0.00	0.50	\$0.00	
02786 - OGSC	Binder Content - Section 1.6.B.2	0	Ton	\$1.00	\$0.00	0.85	\$0.00	
	Gradation - Section 1.6.B.3	0	Ton	\$1.50	\$0.00	0.85	\$0.00	
02787 - Bonded Wearing Course	Binder Content - Section 1.6.C.3	30,534	/SQ YD	\$0.05	\$1,526.70	0.85	\$1,297.70	
	Gradation - Section 1.6.C.4	30,534	/SQ YD	\$0.06	\$1,832.04	0.85	\$1,557.23	
Miscellaneous	Community Coordination Incentive	1	Lump	\$0.00	\$0.00	1	\$0.00	
<b>Total:</b>							<b>\$21,408.73</b>	

**Smoothness Calculations (2017 Specification - 2701 and 02742S)**

Table 1		HMA, OGSC, BWC, & SMA Incentive	
Category*	Max Incentive per Pavement Section	Length	Lanes
1 and 2	\$500	5.20	miles
		Incentive	
		\$0	

  

Table 2		PCCP Incentive	
Category*	Max Incentive per Pavement Section	Length	Lanes
1	\$1,000	5.20	miles
		Incentive	
		\$0	

  

**Definitions**

\*Incentive applied to HMA, PCCP, OGSC, BWC, SMA

Category 1 1) Pavement surfaces having two or more opportunities for improving the ride.  
2) Portland cement concrete paving.

Category 2 Newly constructed pavement surfaces without two or more opportunities for improving ride.

+ Opportunity to improve ride:

1) Placing Granular Borrow, Untreated Base Course, Treated Base Course, Open-Graded Surface Course (OGSC), Bonded Wearing Course (BWC), Stone Matrix Asphalt (SMA), Cold-In-Place Recycling, Hot-In-Place Recycling, and each lift of paving.

2) Rotomilling greater than 1.5 inches in depth.

3) Lane leveling is not considered an opportunity to improve the ride.

Pavement Section - Each travel lane or median, 0.1 mile long.

Incentive does not apply to the HMA surfaces on projects that include an OGSC, BWC, or SMA placed over the HMA surface.

Apply Incentive to Category 1 and 2 pavements longer than 1,000 ft in length, including:

- 1 All traffic lanes
- 2 Ramps
- 3 Medians 8 ft and wider
- 4 Turn lanes
- 5 Bridges and approach slabs with final riding surfaces placed as part of the contract

Do not apply Incentive to:

- 1 Pavements shorter than 1,000 ft
- 2 Shoulders
- 3 Bike Lanes
- 4 Medians narrower than 8 ft
- 5 Horizontal curves with a centerline curvature radius less than 900 ft and areas within the superelevation transitions to these short radius curves
- 6 Tapers
- 7 Surfaces within 15 ft of bridge decks and approach slabs not paved as part of the contract