

## 5.6 WILDLIFE CROSSING OPTIONS

Inclusion of wildlife features with the various alternatives may be considered. Were they to be included, the wildlife underpasses and land bridges over the L-29 Canal could be constructed in the embankment of alternatives 2a, 6a, 7a, and 8a, or in the reconstructed embankment of alternatives 2b, 4a, 4b, 6b, 7b, or 8b.

**Table 11. Summary of Water Quality Treatment Options**

Water Quality Treatment Options	Feasibility Assessment	Cost Differential Relative to Alt. 2b	Constructibility	Wetlands impacts to ENP	Applicability to Other Alternatives	Other Comments
<b>Option 1-A</b> Shift North and Compress Swale with Wall Elements/ South Side	Technically feasible. Reduces wetlands impacts. Relatively high cost.	-\$73,663,592	Workable; centerline offset needed to execute MOT	21 ft of impact vs. 51 ft for Alt 2b	Applicable	Could reduce strikes on the road
<b>Option 1-B</b> Shift North and Compress Swale with Wall Elements/ North Side	Technically feasible. Reduces wetlands impacts. Relatively high cost.	+\$101,934,192	Workable; centerline offset needed to execute MOT	No impact to ENP; affects L-29 Canal	Applicable	Could reduce strikes on the road
<b>Option 1-C</b> Shift North into L-29 Canal	Technically feasible. Reduces wetlands impacts. Higher cost.	+\$15,366,792	Workable; requires temporary wall.	No impact to ENP; affects L-29 Canal	Applicable	None
<b>Option 2</b> Exfiltration Trench with Curb and Gutter	Technically feasible. Reduces wetlands impacts. Higher cost.	+\$17,565,592	Workable; requires temporary wall.	Up to 33 ft of impact vs. 51 f for Alt 2b	Applicable	None
<b>Option 3</b> Exfiltration Trench with Shoulder Gutter	Technically feasible. Reduces wetlands impacts. Higher cost.	+\$17,844,092	Workable; requires temporary wall.	Up to 33 ft of impact vs. 51 f for Alt 2b	Applicable	None
<b>Option 4</b> Wet Detention System	Not Feasible. Permitting exception needed. Same cost.	+\$0	Workable; requires temporary wall.	90 ft of impact vs. 51 f for Alt 2b	Not Applicable	None
<b>Option 5</b> Single Swale Dry Detention System	Technically feasible, but no advantages over simpler options. Higher cost.	+\$8,464,892	Feasible	60 ft of impact vs. 51 f for Alt 2b	Applicable	None

Source: PBS&J, 2001 (Engineering Appendix).  
 Wildlife crossing options provide the opportunity to enhance ecological connectivity among animal populations and reduce mortality to wildlife crossing the Tamiami Trail. Several potential options are summarized below

**Wildlife Roadway Undercrossing Bridges.** This would involve the construction of approximately 50-foot-long concrete slab bridges placed in the highway alignment to provide undercrossings for wildlife. Fencing would be needed on each side of the underpasses to funnel wildlife to the underpasses. The typical section for this 43-foot, one-inch-wide bridge for this purpose provides sufficient deck area for the 12-foot-wide travel lanes and 8-foot shoulders on both sides of the travel lanes.

The superstructure and substructure shown for the wildlife undercrossing is based on other wildlife undercrossing bridges of similar configuration developed for various FDOT construction projects. The bridge structural system would be a cast-in-place flat slab supported on pile bents using 18-inch square prestressed concrete piles installed and driven in holes predrilled to elevation -10.00 into the limerock bedrock. The abutments form a vertical wall with precast panels behind the piles retaining the embankment.

Methods for placement of cranes and delivery of material, such as piles, precast beams, and concrete are similar to other mainline bridge replacement alternatives for this project.

Each wildlife roadway undercrossing bridge is estimated to cost \$2,030,026.

**Wildlife Canal Crossings.** These bridges, which would consist of a 24-foot-wide concrete bridge with two feet of soil spread on its surface for vegetation to grow, would enable terrestrial wildlife to cross the L-29 Canal. The typical section for this 27-foot, one-inch-wide bridge provides sufficient deck area for a 14-foot-wide wildlife passage bounded by a five-foot landscape buffer on each side. Figure 27 provides a description of the bridge length, the canal clearances, and the hydraulic opening.

Standard traffic railing barrier would retain natural earth on the bridge and provide an appearance similar to that of the vehicular traffic bridges.

The bridge structural system would be of an AASHTO Type II superstructure with cast-in-place concrete deck supported on pile bents using 18-inch square prestressed concrete piles. Standard construction procedures could be used for this bridge with little impact to existing traffic.

Each wildlife canal crossing is estimated to cost \$326,427.

**Wildlife Barriers.** This element consists of the installation of a special wildlife barrier along both sides of the roadway embankment sections of the various alternatives.

The estimated cost for the wildlife barrier feature is \$125.00 per linear foot.

A comparison of the costs of wildlife features for each alternative is presented in Table 12.

Section 5.0 – Formulation of Alternative Plans

Table 12. Wildlife Feature Cost Summary

Alternative	Shelf at Bridge	Wildlife Under-crossing	Wildlife Canal Crossing	Linear Feet of Wildlife Barrier	Total Cost
	\$50,000 each	\$2,030,026 each	\$326,427 each	\$125 / L.F.	
1	0	3	3	113,000	\$21,194,359
2a	4	2	2	110,000	\$18,662,906
2b	4	2	2	110,000	\$18,662,906
3a	4	2	2	110,000	\$18,662,906
3b	4	2	2	110,000	\$18,662,906
4a	4	2	2	110,000	\$18,662,906
4b	4	2	2	110,000	\$18,662,906
5a	2	0	0	0	\$100,000
5b	2	0	0	0	\$100,000
6a	2	2	2	70,800	\$13,662,906
6b	2	2	2	70,800	\$13,662,906
7a	2	3	3	107,000	\$20,544,359
7b	2	3	3	107,000	\$20,544,359
8a	0	3	3	113,000	\$21,194,359
8b	0	3	3	113,000	\$21,194,359

Source: PBS&J, 2001 (Engineering Appendix).