

Buena Vista Landfill Proposed Transfer Station Opportunities and Constraints Analysis

SEPTEMBER 9, 2020



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Buena Vista Transfer Station Opportunities and Constraints Analysis

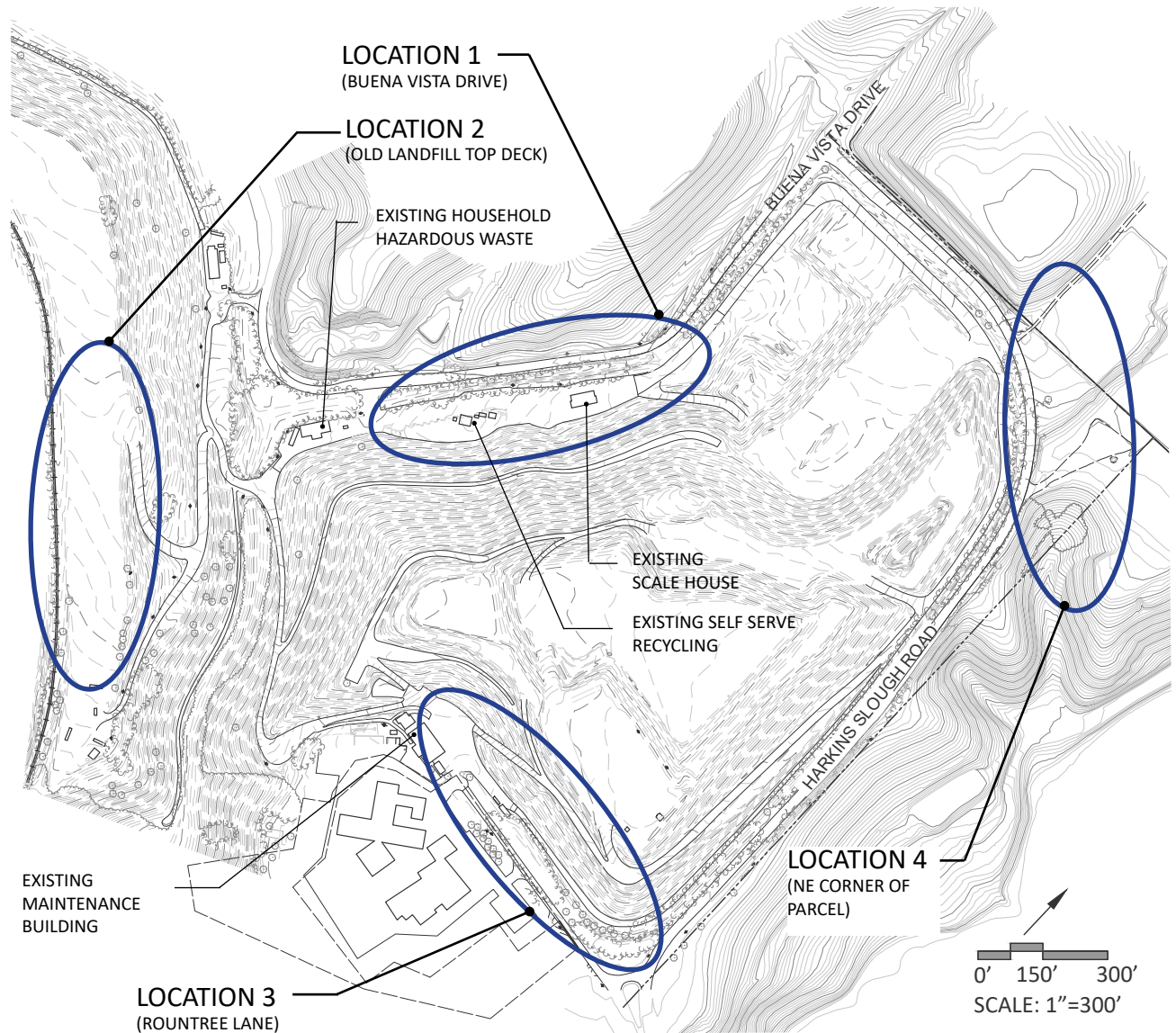


Location Map

I. INTRODUCTION

By 2030 the Buena Vista Landfill, which is the primary solid waste facility for the County of Santa Cruz, is expected to reach capacity. The County of Santa Cruz Department of Public Works (DPW) hired SCS Engineers to provide Master Planning services to assist the County in selecting a location within the landfill to build a transfer station. The future transfer station will allow for self-haulers and commercial haulers within the County to continue bringing recyclable materials and solid waste to a County site. Solid waste will be transported to the Monterey Peninsula Landfill or other location. SCS Engineers has developed conceptual plans at the locations identified by the County.

Throughout this document there are references to a potential compost processing facility. DPW is concurrently evaluating the development of a facility to process organics and yard waste. Location 2, on the top deck of the old landfill, has been identified as the only location at the Buena Vista Landfill that can accommodate a proposed compost facility.



*LOCATION 5 involves various options for construction of a new facility off-site as detailed on pages 21-22.

I. INTRODUCTION

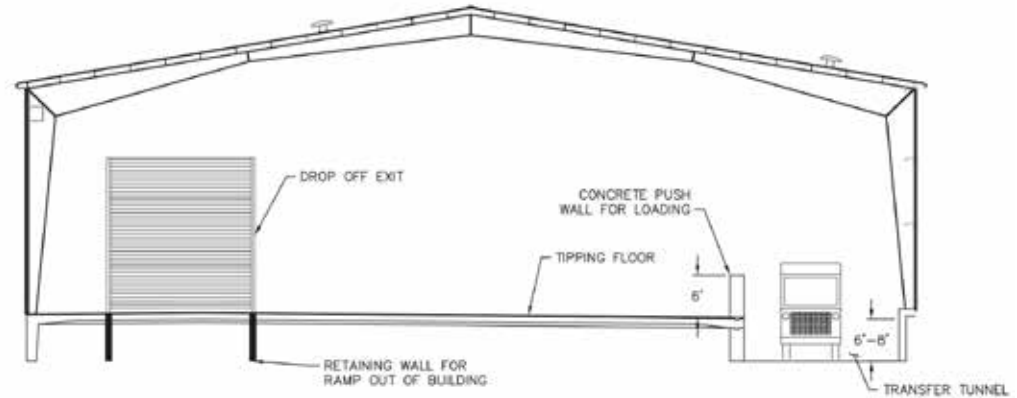
Transfer station sizes shown in the various options are based on SCS's "Draft Buena Vista Landfill Transfer Station Design Report", dated March 12, 2020. SCS used data provided by DPW to develop the following design capacity to process 600 tons/day:

- Tipping Floor Storage= 2 days
- Partial Depth Tunnel
- 9 hours of operation per day for 310 days/year

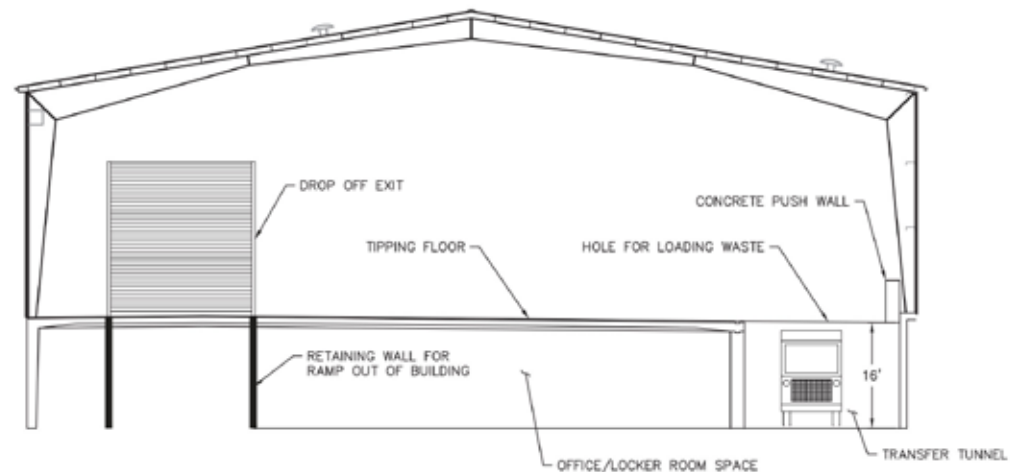
Based on the established criteria, SCS calculated the ideal transfer station size to be:

- Transfer Station: 44,400 square feet (120'x370')
- Bulk storage: 7,500 square feet (75'x100')
- Queuing distance: 1,035' to accommodate peak traffic.

Each location has unique challenges and associated impacts to operations. This document summarizes the opportunities and constraints of each potential site to assist in evaluation of the alternatives. This document was prepared by internal DPW staff using data from SCS's "Draft Buena Vista Landfill Transfer Station Design Report" (March 12, 2020), design options and discussions between DPW staff and SCS Engineers, and preliminary review of code requirements.



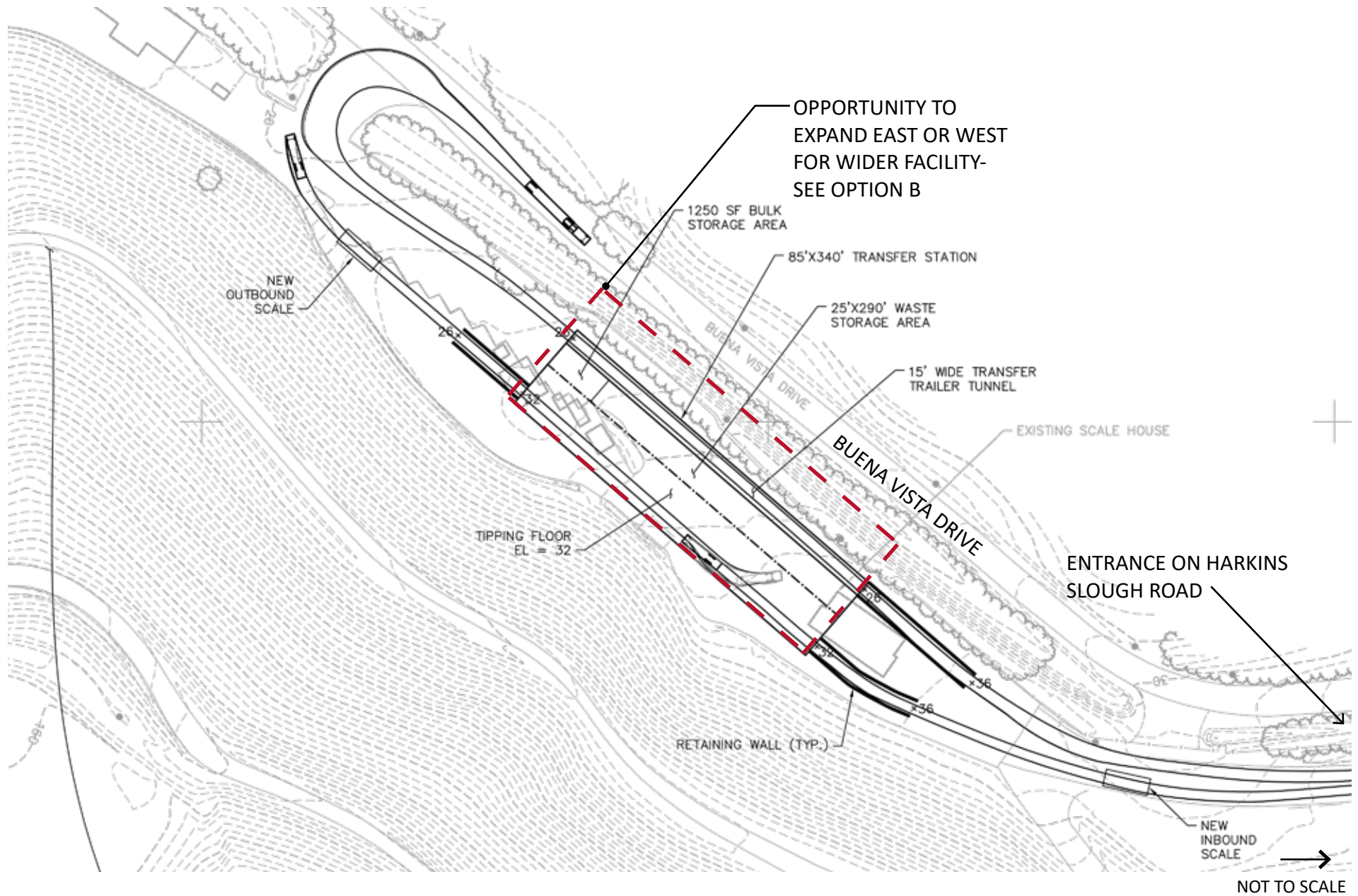
TRANSFER STATION EXIT HALF DEPTH TUNNEL
NOT TO SCALE



TRANSFER STATION EXIT FULL DEPTH TUNNEL
NOT TO SCALE

Conceptual sections of transfer station, SCS Engineers March 12, 2020

II. LOCATION 1- OPTION A (BUENA VISTA DRIVE)



II. LOCATION 1- OPTION A (BUENA VISTA DRIVE)

Option A includes construction of new facility 85'x340' (28,900 square feet) at the location of the existing scale house and self-serve recycle.

Opportunities

- No disturbance to closed landfill.
- Stable ground for construction.
- Minimal to no environmental impacts.

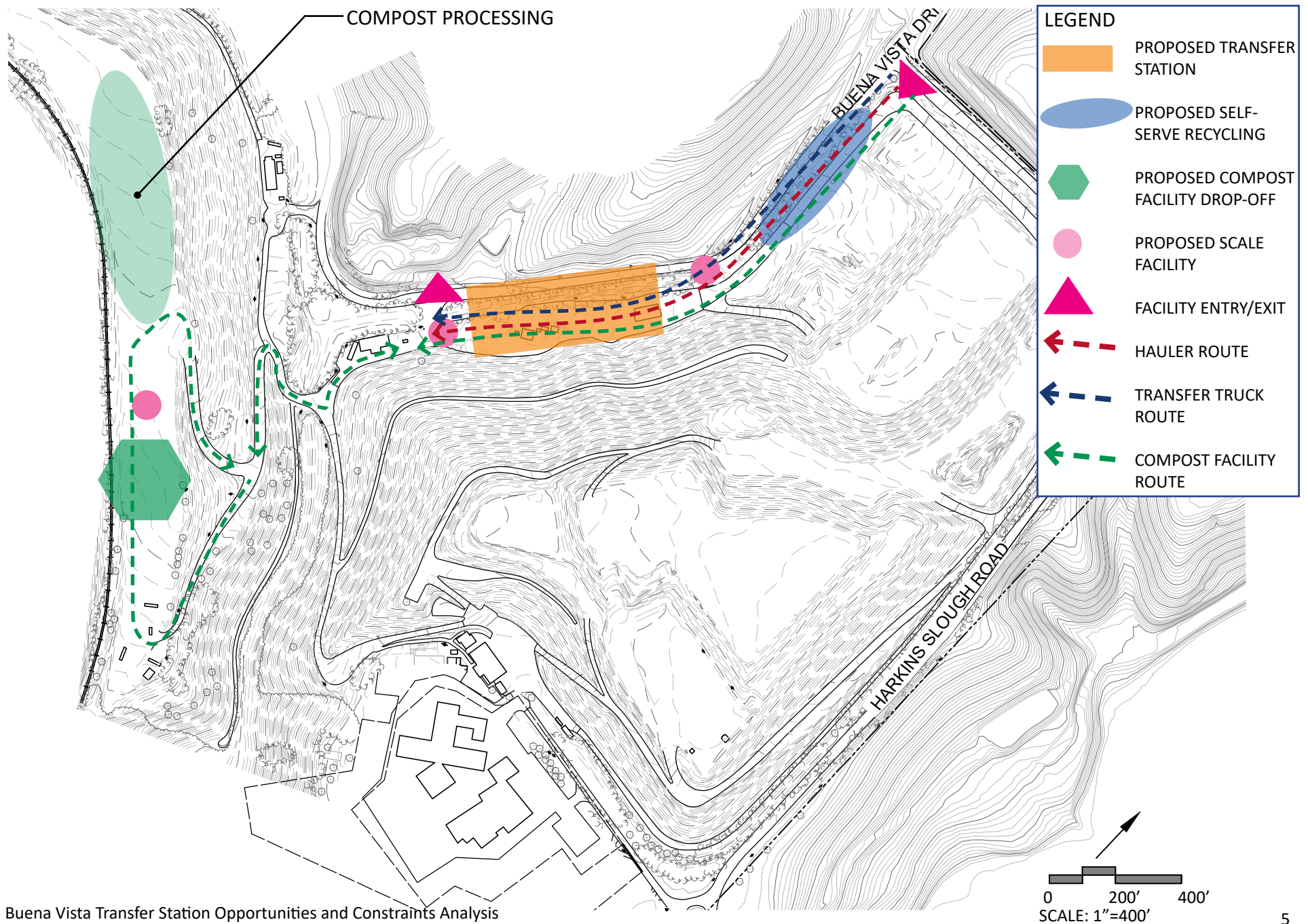
Constraints

- The 70' wide tipping floor is very narrow to be functional. Refuse to be loaded as soon as it hits tipping floor and limited capacity for bulk storage.
- New inbound/outbound scales required.
- New self-serve recycling area to be constructed if continue to offer service.
- Location of new entrance off Harkins Slough Road/Buena Vista Drive could pose traffic/safety concerns.
- Existing services would be disrupted during construction or require temporary re-route.
- Drop offs to compost facility would travel through transfer station unless new scale house/entrance at Harkins Slough Road/Rountree Lane.

Capital & Operational Impacts	Yes/No	Cost	Additional Schedule Impacts	Notes
Transfer station	Yes	\$10,500,000*		
New scale facility	Yes	\$1,000,000		Inbound and outbound
New entrance	Yes	\$50,000		
Accommodates bulk waste	No			
Self-serve recycling center	Yes	\$500,000		New recycling area push into existing closed landfill
TOTAL		\$12,050,000		

*Cost extrapolated from SCS "Draft Buena Vista Landfill Transfer Station Design Report", dated March 12, 2020. SCS cost estimate includes building (53,400sf), (1) scale, site work, design fees, etc.

II. LOCATION 1- OPTION B (BUENA VISTA DRIVE)



II. LOCATION 1- OPTION B (BUENA VISTA DRIVE)

Option B includes construction of new facility 120'x445' (53,400 square feet) at the location of the existing scale house and self-serve recycle and expands east into the closed landfill and/or west towards Buena Vista Drive.

Opportunities

- Mostly on stable ground, with expansion to the east, pushing into the closed landfill.
- Potential for expansion to the west to coordinate with DPW Road Operations project on Buena Vista Drive, benefitting both projects with potential re-alignment of road and shared costs.

Constraints

- Critical timing to coordinate with Buena Vista Drive improvement project with Road Operations to not cause delays to Road project.
- Expansion to the west, would trigger environmental clearances and mitigation due to impacts to the riparian area along Buena Vista Drive.
- Buena Vista Drive is a scenic road, as designated by the County General Plan, and will require visual considerations.
- Location of new entrance off Harkins Slough Road/Buena Vista Drive could pose traffic/safety concerns.
- Reduction in 200' agricultural setback with Agricultural Policy Advisory Committee (APAC) required.
- Expansion to the east will require building foundation on waste and re-closure of that section of landfill.
- No space for self-serve recycling center (unless new area built into Module 5 or by Maintenance Building).
- Drop offs to compost facility would travel through transfer station unless new scale house/entrance at Harkins Slough Road/Rountree Lane.
- Existing services would be disrupted during construction or require temporary re-route.

Capital & Operational Impacts	Yes/No	Cost	Additional Schedule Impacts	Notes
Transfer station	Yes	\$12,800,000*		
New scale facility	Yes	\$1,000,000		(inbound and outbound)
New entrance	Yes	\$50,000		
Accommodates bulk waste	Yes			
Self-serve recycling center	Yes	\$500,000		New recycling area push into existing closed landfill
If expand east- re-close landfill	Yes	\$100,000	+6-12 months	State Water Resource Control Board
If expand west- environmental mitigation will be required	Yes	\$200,000	+12-24 months	USFW
TOTAL		\$14,650,000	+12-24 months	

*Cost extrapolated from SCS "Draft Buena Vista Landfill Transfer Station Design Report", dated March 12, 2020. SCS cost estimate includes building (53,400sf), (1) scale, site work, design fees, etc.

II. LOCATION 1 (BUENA VISTA DRIVE)



Harkins Slough Road and Buena Vista Drive intersection
Buena Vista Transfer Station Opportunities and Constraints Analysis

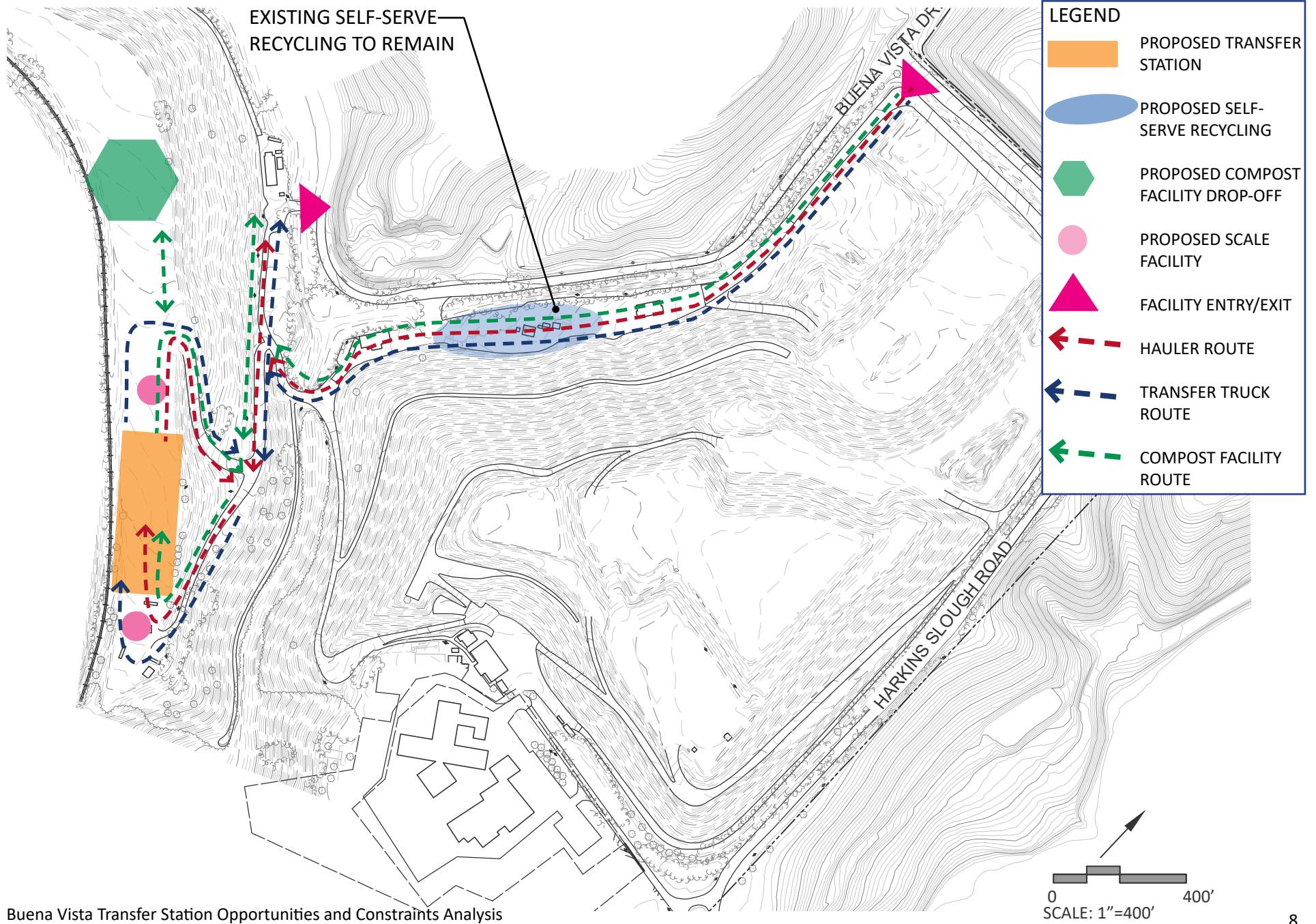


Existing self-serve recycle area, looking south



Buena Vista Drive looking south

II. LOCATION 2- OPTION A (OLD LANDFILL TOP DECK)



II. LOCATION 2- OPTION A (OLD LANDFILL TOP DECK)

Option A includes construction of new facility totaling 53,400 square feet on the top deck of the old landfill.

Opportunities

- Includes transfer station 120'x370' (44,400 sf), bulk storage 75'x100' (7,500 sf), office 50'x30' (1,500 sf) and tipping floor width of 105' will allow for efficient operations.
- Larger flat, open space.
- Connection to rail line for potential transport to landfill.
- Existing self-serve recycling to remain.
- Existing services would not be disrupted during construction or require temporary re-route.

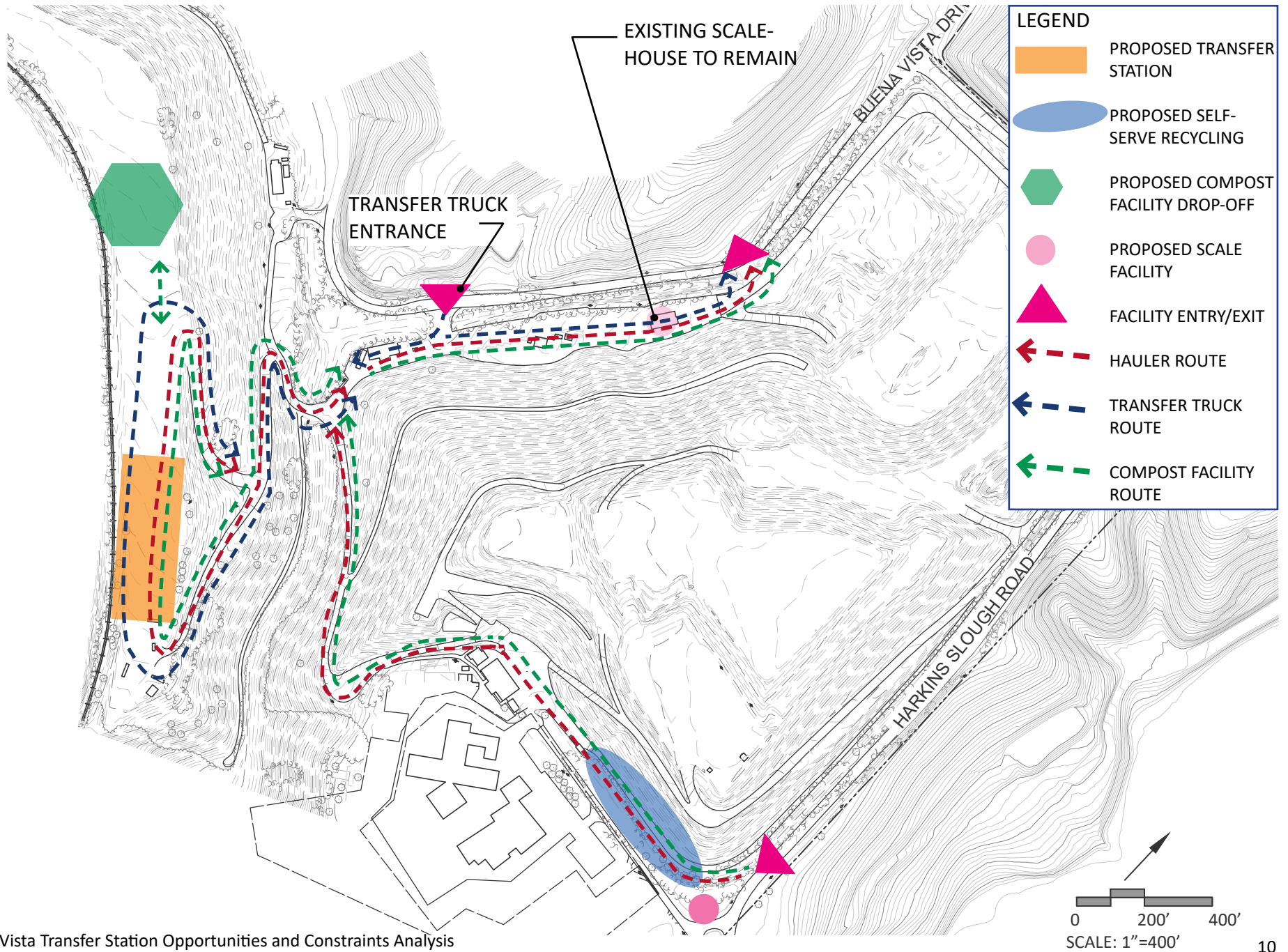
Constraints

- Smaller or different location would be needed for compost facility. If compost rows located on top of newer closed landfill, would require landfill closure prior to facility being constructed. Facility requires roof and concrete working surface. Would cut the landfill capacity short.
- Unknown foundation requirements on old landfill until Geotechnical investigation done.
- Load out tunnel may not be possible on top of waste- may need to use Grappler (higher building ceiling and additional equipment).
- Improvements to road leading to old landfill required.
- Location of new entrance off Harkins Slough Road/Buena Vista Drive could pose traffic/safety concerns.
- Highly visible from Buena Vista Drive (scenic road).

Capital & Operational Impacts	Yes/No	Cost	Additional Schedule Impacts	Notes
Transfer station	Yes	\$12,800,000*	+6-12 months	CalRecycle & State Water Resource Control Board
New scale facility	Yes	\$1,000,000		(inbound and outbound)
New entrance	Yes	\$50,000		
Accommodates bulk waste	Yes			
Self-serve recycling center	Yes			Existing to remain
Road improvements to transfer station	Yes	\$1,500,000		
TOTAL		\$15,350,000	+6-12 months	

*Cost extrapolated from SCS "Draft Buena Vista Landfill Transfer Station Design Report", dated March 12, 2020. SCS cost estimate includes building (53,400sf), (1) scale, site work, design fees, etc.

II. LOCATION 2- OPTION B (OLD LANDFILL TOP DECK)



II. LOCATION 2- OPTION B (OLD LANDFILL TOP DECK)

Option B includes construction of new facility totaling 53,400 square feet on the top deck of the old landfill with new entrance off Rountree Lane.

Opportunities

- Includes transfer station 120'x370' (44,400 sf), bulk storage 75'x100' (7,500 sf), office 50'x30' (1,500 sf) and tipping floor width of 105' will allow for efficient operations.
- Minimize cross traffic of transfer trucks and haulers with transfer trucks entering on Buena Vista Drive and haulers entering on Rountree Lane.
- Larger flat, open space.
- Connection to rail line for potential transport to landfill.
- Existing services would not be disrupted during construction or require temporary re-route.

Constraints

- New self-serve recycling area to be constructed.
- Smaller or different location would be needed for compost facility. If compost rows located on top of newer closed landfill, would require landfill closure prior to facility being constructed. Facility requires roof and concrete working surface. Would cut the landfill capacity short.
- Unknown foundation requirements on old landfill until Geotechnical investigation done.
- Load out tunnel may not be possible on top of waste- may need to use Grappler (higher building ceiling and additional equipment).
- Additional improvements to road leading to old landfill and "back road" required.
- Increased potential for collisions with maintenance activities and increased traffic.
- Increased traffic on Harkins Slough Road/Rountree Lane may not be compatible with other County uses.
- Highly visible from Buena Vista Drive (scenic road).

Capital & Operational Impacts	Yes/No	Cost	Additional Schedule Impacts	Notes
Transfer station	Yes	\$12,800,000*	+6-12 months	CalRecycle & State Water Resource Control Board
New scale facility	Yes	\$1,000,000		(inbound)
New entrance	Yes	\$50,000		
Accommodates bulk waste	Yes			
Self-serve recycling center	Yes	\$500,000		New at Harkins Slough Road entrance
Road improvements to transfer station	Yes	\$2,300,000		
TOTAL		\$16,650,000	+6-12 months	

*Cost extrapolated from SCS "Draft Buena Vista Landfill Transfer Station Design Report", dated March 12, 2020. SCS cost estimate includes building (53,400sf), (1) scale, site work, design fees, etc.

II. LOCATION 2 (OLD LANDFILL TOP DECK)



Harkins Slough Road and Buena Vista Drive intersection
Buena Vista Transfer Station Opportunities and Constraints Analysis

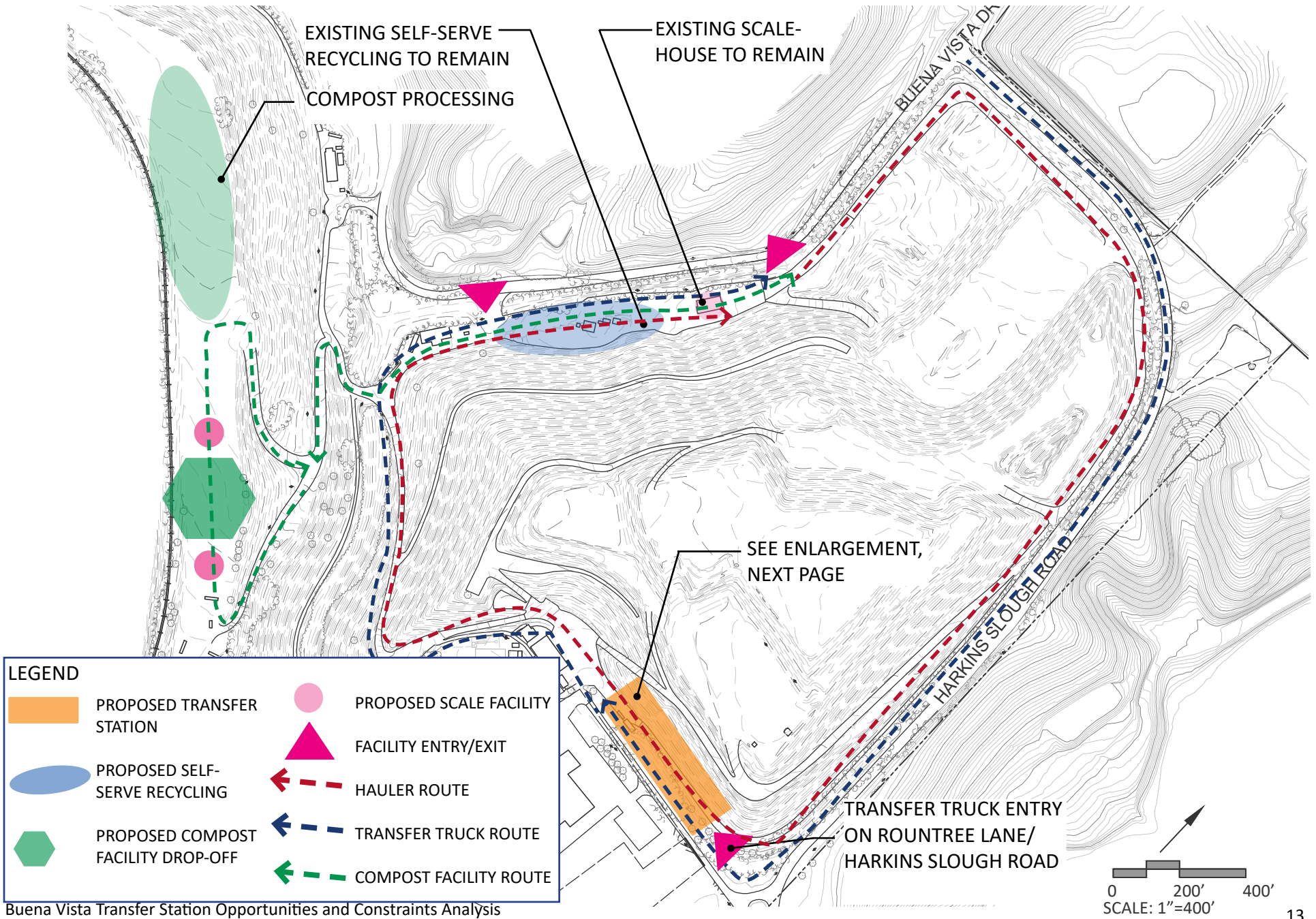


Existing road down from top deck of old landfill

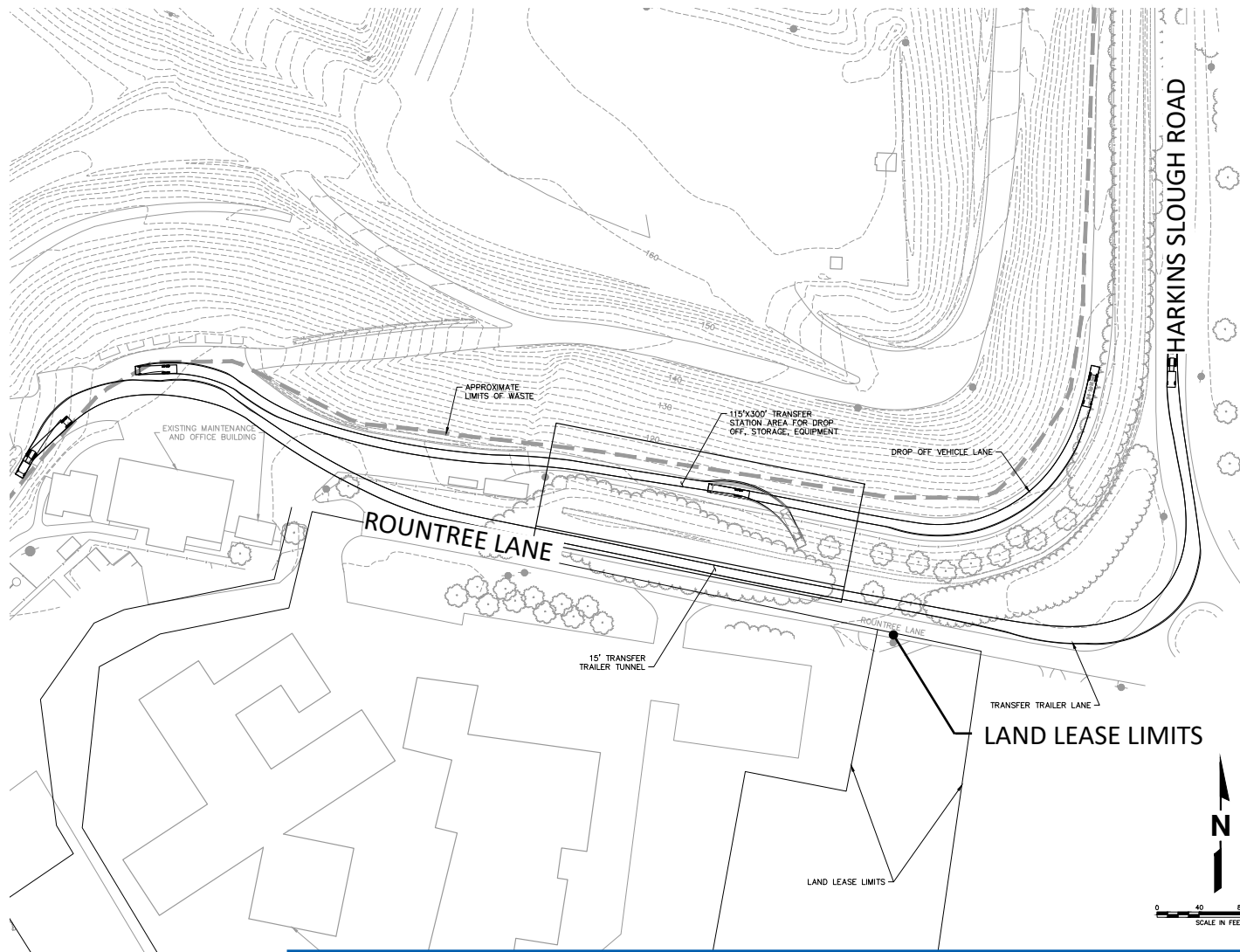


Potential exit shown in Option A

II. LOCATION 3 (ROUNTREE LANE)



II. LOCATION 3- ENLARGEMENT (ROUNTREE LANE)



II. LOCATION 3 (ROUNTREE LANE)

Location 3 includes construction of new facility 115'x300' (34,500 square feet) near the existing maintenance building, adjacent to Rountree Lane.

Opportunities

- Larger flat, open space with stable ground for building foundation.
- Current services would not be disrupted during construction.
- Continue to use existing scale house.
- Self-serve recycling maintained.

Constraints

- Does not accommodate bulk waste storage.
- Increased traffic on Harkins Slough Road/Rountree Lane may not be compatible with other County uses.
- “Back Road” will need improvements to accommodate traffic flow.
- Existing ground lease with State located in center of Rountree Lane. If improvements encroach, would need to amend ground lease. This process could take 12-24 months.
- Increased potential for collisions with maintenance activities and increased traffic.
- Existing maintenance building and offices to be relocated during construction.

Capital & Operational Impacts	Yes/No	Cost	Additional Schedule Impacts	Notes
Transfer station	Yes	\$11,000,000*		
New scale facility (inbound and outbound)	No			
New entrance	No			
Accommodates bulk waste	No			
Self-serve recycling center	Yes			Existing maintained
Road improvements to transfer station	Yes	\$1,800,000		
TOTAL		\$12,800,000		

*Cost extrapolated from SCS “Draft Buena Vista Landfill Transfer Station Design Report”, dated March 12, 2020. SCS cost estimate includes building (53,400sf), (1) scale, site work, design fees, etc.

II. LOCATION 3 (ROUNTREE LANE)



Harkins Slough Road and Rountree Lane intersection



View from Rountree Lane towards proposed facility location

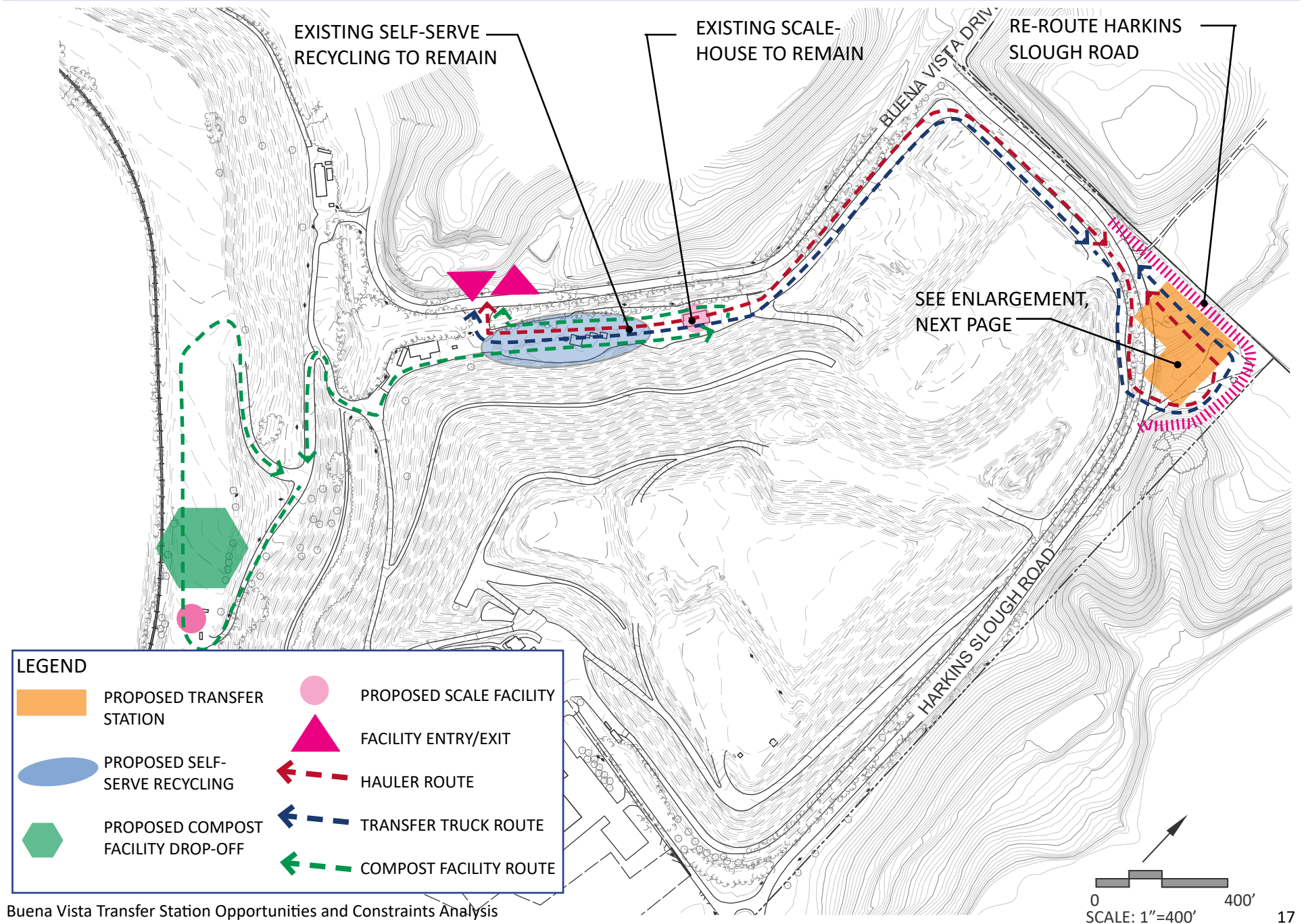


Existing maintenance building area
Buena Vista Transfer Station Opportunities and Constraints Analysis

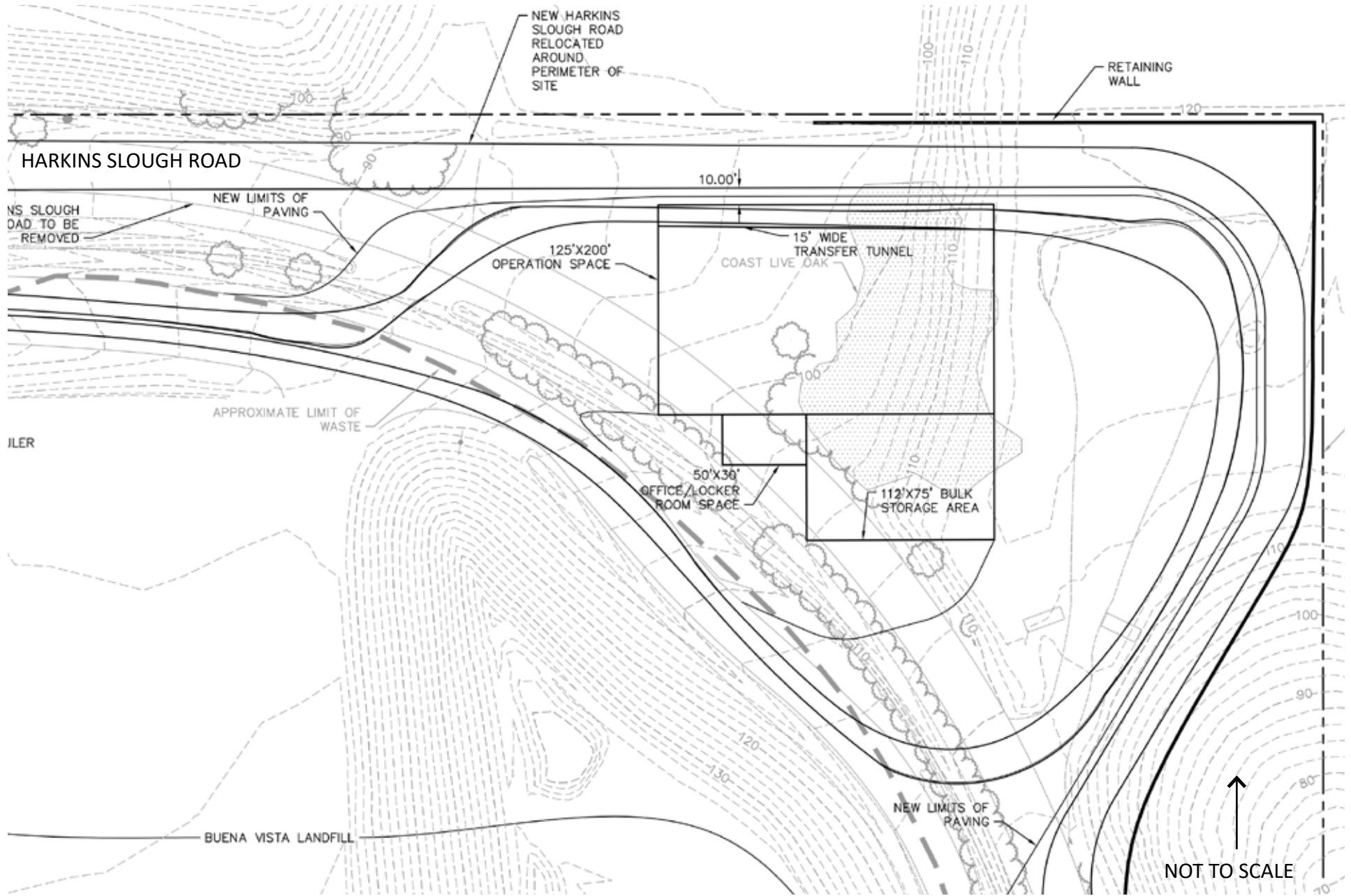


Existing "Back Road"

II. LOCATION 4 (NE CORNER OF PARCEL)



II. LOCATION 4- ENLARGEMENT (NE CORNER OF PARCEL)



II. LOCATION 4 (NE CORNER OF PARCEL)

Location 4 includes construction of new facility totaling 34,900 square feet on undeveloped land in the north east corner of the landfill property.

Opportunities

- Building configuration efficient for operations with the transfer station 125'x200' (25,000sf); bulk storage 112'x75' (8,400sf), and office 50'x30' (1,500sf).
- Re-route Harkins Slough Road to increase facility size and keep public road outside of the facility.
- Stable ground for construction.
- Current services would not be disrupted during construction.
- Continue to use existing scale house.
- Self-serve recycling maintained.
- No passive venting of landfill gases required.

Constraints

- Adjacent to the USFW Ellicott Slough National Wildlife Refuge (long-toed salamander) and existing oak trees on site.
- Scenic considerations from Buena Vista Drive.
- Reduction in 200' agricultural setback with Agricultural Policy Advisory Committee (APAC) required.

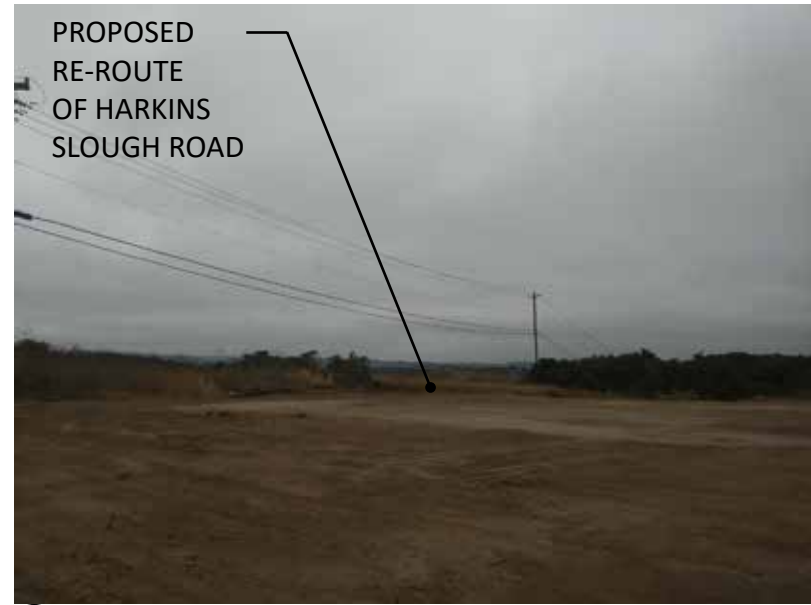
Capital & Operational Impacts	Yes/No	Cost	Additional Schedule Impacts	Notes
Transfer station	Yes	\$11,000,000*	+6-12 months	CalRecycle & State Water Resource Control Board
New scale facility	No			
New entrance	No			
Accommodates bulk waste	Yes			
Self-serve recycling center	Yes			Existing maintained
Harkins Slough Road re-route	Yes	\$850,000		
Retaining wall for Harkins Slough Road re-route	Yes	\$3,000,000		
TOTAL		\$14,850,000	+6-12 months	

*Cost extrapolated from SCS "Draft Buena Vista Landfill Transfer Station Design Report", dated March 12, 2020. SCS cost estimate includes building (53,400sf), (1) scale, site work, design fees, etc.

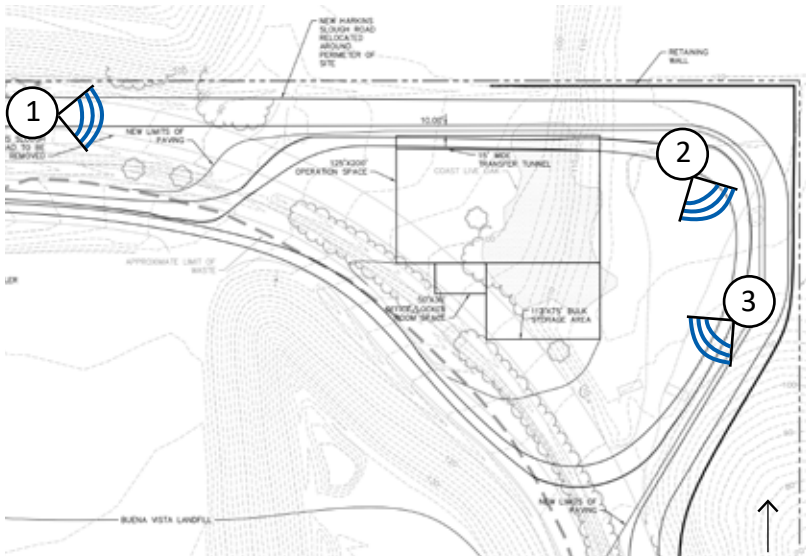
II. LOCATION 4 (NE CORNER OF PARCEL)



① View from Harkins Slough Road towards proposed facility location



② View towards Ellicott Slough and Monterey Bay



③ View southwest towards landfill

II. LOCATION 5- OPTION A (ALTERNATE SITE)

Option A includes construction of new facility on County property other than the Buena Vista Landfill.

Opportunities

- Potential to design without many constraints.
- Current services would not be disrupted during construction.

Constraints

- County would need to purchase or develop property other than Buena Vista Landfill.
- Lack of available sites adequately zoned.
- Significant public review required and potential opposition.
- Increased ancillary costs to operate two sites while Buena Vista Landfill operational.

Capital & Operational Impacts	Yes/No	Cost	Additional Schedule Impacts	Notes
Transfer station	Yes	\$13,000,000*		CalRecycle & State Water Resource Control Board
Property acquisition	Yes	\$4,000,000	+12 months	
TOTAL		\$17,000,000	+12 months	

*Cost extrapolated from SCS "Draft Buena Vista Landfill Transfer Station Design Report", dated March 12, 2020. SCS cost estimate includes building (53,400sf), (1) scale, site work, design fees, etc.

II. LOCATION 5- OPTION B (ALTERNATE SITE)

Option B is to partner with another agency to provide a regional transfer station at location other than the Buena Vista Landfill.

Opportunities

- Possibility of industrial areas zoned appropriately outside of County.
- Shared cost of building and operating facility.
- Potential to design without many constraints.
- Current services would not be disrupted during construction.

Constraints

- Politically challenging.
- Less control over timing.
- Depending on location, could result in increased illegal dumping, additional traffic to Ben Lomond Transfer Station or to the Monterey Peninsula Landfill in Marina.

Capital & Operational Impacts	Yes/No	Cost	Schedule	Notes
Transfer station	Yes	\$10,000,000*		CalRecycle & State Water Resource Control Board; Shared cost
Property acquisition	Yes	\$4,000,000	+24-36 months	Develop agreement
TOTAL		\$14,000,000	+24-36months	

*Cost extrapolated from SCS "Draft Buena Vista Landfill Transfer Station Design Report", dated March 12, 2020. SCS cost estimate includes building (53,400sf), (1) scale, site work, design fees, etc. with +/- 20% cost savings with shared costs.

III. SUMMARY

Each of the locations have unique challenges where the cost, schedule, impacts, and long term functionality of the facility need to be weighed. The table below highlights the high level conceptual costs projected for each option, as well as additional time for the permitting that would be required above the baseline schedule for development of plans, specifications, estimates, bidding, and construction. It will likely take 12-18 months to award a bid and 18-24 months for construction, depending on the selected option.

Option	Cost	Additional Schedule Impacts	Opportunities	Constraints
Location 1- Option A <i>(Buena Vista Drive)</i>	\$12,050,000		<ul style="list-style-type: none"> ✓ Stable ground for construction. ✓ No disturbance to closed landfill. ✓ Minimal environmental impacts. 	<ul style="list-style-type: none"> - Too narrow to be functional. - Existing services disrupted during construction. - Difficult to accommodate self-serve recycling.
Location 1- Option B <i>(Buena Vista Drive)</i>	\$14,650,000	+12-24 months	<ul style="list-style-type: none"> ✓ Coordination with Roads project to re-align Buena Vista Drive and provide adequate sized facility. ✓ Minimal internal road improvements required. 	<ul style="list-style-type: none"> - Expanding west trigger environmental mitigations - Existing services disrupted during construction. - Difficult to accommodate self-serve recycling.
Location 2- Option A <i>(Old landfill top deck)</i>	\$15,350,000	+6-12 months	<ul style="list-style-type: none"> ✓ Existing services not disrupted during construction. ✓ Potential for rail line connection for future transport. 	<ul style="list-style-type: none"> - Does not accommodate full compost processing facility. - Major landfill road improvements required. - Building foundation may be difficult on top of old waste. - Load out tunnel may not be possible on top of old waste. - Highly visible from Buena Vista Drive (scenic road).

III. SUMMARY

<p>Location 2- Option B <i>(Old landfill top deck)</i></p>	<p>\$16,650,000</p>	<p>+6-12 months</p>	<ul style="list-style-type: none"> ✓ Minimize cross traffic between transfer trucks and haulers. ✓ Existing services not disrupted during construction. ✓ Potential for rail line connection for future transport. 	<ul style="list-style-type: none"> - May not be compatible with adjacent County uses. - Does not accommodate full compost processing facility. - Major landfill road improvements required. - Building foundation may be difficult on top of old waste. - Load out tunnel may not be possible on top of old waste. - Highly visible from Buena Vista Drive (scenic road).
<p>Location 3 <i>(Adjacent to existing maintenance building)</i></p>	<p>\$12,800,000</p>		<ul style="list-style-type: none"> ✓ Existing public services not disrupted during construction. 	<ul style="list-style-type: none"> - May not be compatible with adjacent County uses. - Too narrow to be functional without amending State ground lease with Roundtree facility. - Major landfill road improvements required. - Existing maintenance building activities and offices relocated during construction.
<p>Location 4 <i>(NE corner of landfill)</i></p>	<p>\$14,850,000</p>	<p>+6-12 months</p>	<ul style="list-style-type: none"> ✓ Most efficient for operations. ✓ Accommodates desired services. ✓ Existing services not disrupted during construction. ✓ Keeps truck traffic on flatter roads, for improved safety and easier long term maintenance. 	<ul style="list-style-type: none"> - Adjacent to USFW Ellicott Slough National Wildlife Refuge. - Existing oak trees to be removed. - Re-route Harkins Slough Road.

III. SUMMARY

Location 5- Option A <i>(Other County property)</i>	\$17,000,000	+12 Months	<ul style="list-style-type: none"> ✓ Potential to design with minimal constraints. ✓ Existing services not disrupted during construction. 	<ul style="list-style-type: none"> - County would need to purchase or develop property other than Buena Vista Landfill. - Lack of available sites zoned with require zoning. - Significant public review and potential opposition.
Location 5- Option B <i>(partner with other agency)</i>	\$14,000,000	+24-36 Months	<ul style="list-style-type: none"> ✓ Potential to share costs and resources. ✓ Potential to design with minimal constraints. ✓ Existing services not disrupted during construction. 	<ul style="list-style-type: none"> - Politically challenging. - Less control over timing. - Potential to result in increased traffic to other facilities or illegal dumping.

Conclusion

The County team evaluated each of the options based on operations, construction feasibility and impacts, permitting, and cost to determine Location 4 is the preferred option. The building configuration provides adequate space for bulk storage and maintains the existing self-serve recycling and household hazardous waste receiving areas. The circulation allows for a simple loop, utilizing the existing entrance on Buena Vista Drive and keeps traffic off the steeper facility roads, providing a safer route and reducing cost of construction and long term maintenance. In addition, there will be minimal impacts to operations during construction, allowing the landfill to maintain services and reach full capacity. Location 4 provides the greatest number of opportunities for the County to maximize the use of the Buena Vista Landfill in serving the public for both the short and long term.