



Meeting Agenda: Thursday, June 6, 2024, 7:30 a.m.

City of Moscow Council Chambers • 206 E 3<sup>rd</sup> Street • Moscow, ID 83843  
(A) = Board Action Item

1. **Consent Agenda (A)** - Any item will be removed from the consent agenda at the request of a member of the Board and that item will be considered separately later.
  - A. Minutes from April 18, 2024
  - B. April 2024 Payables
  - C. April 2024 Financials**ACTION:** Approve the consent agenda or take such other action deemed appropriate.
2. **Public Comment**

Members of the public may speak to the Board regarding matters NOT on the Agenda nor currently pending before the Moscow Urban Renewal Agency. Please state your name and resident city for the record and limit your remarks to three minutes.
3. **Update on FY2025 MURA Budget & Capital Improvement Plan – Cody Riddle**

The Agency has scheduled the Fiscal Year 2025 Budget Hearing for August 1, 2024. Staff will provide an update on the draft budget, capital improvement plan, and upcoming schedule.
4. **Update on Soil Remediation - Sixth & Jackson Property – Cody Riddle**

Staff will provide an update on the soil monitoring and remediation efforts of the Agency's property at Sixth & Jackson Street.
5. **General Agency Updates – Cody Riddle**
  - General agency business

**NOTICE:** It is the policy of the City of Moscow that all City-sponsored public meetings and events are accessible to all people. If you need assistance in participating in this meeting or event due to a disability under the ADA, please contact the City's ADA Coordinator by phone at (208) 883-7600, TDD (208) 883-7019, or by email at [adacoordinator@ci.moscow.id.us](mailto:adacoordinator@ci.moscow.id.us) at least 48 hours prior to the scheduled meeting or event to request an accommodation. The City of Moscow is committed to ensuring that all reasonable accommodation requests are fulfilled.



City of Moscow Council Chambers • 206 E 3<sup>rd</sup> Street • Moscow, ID 83843

Commissioners Present	Commissioners Absent	Staff in Attendance
Steve McGeehan, Chair	Sandra Kelly	Cody Riddle, Executive Director
Mark Beauchamp		Jennifer Fleischman, Clerk
Drew Davis		Renee Tack, Treasurer
Tom Lamar		
Alison Tompkins		
Nancy Tribble		

McGeehan called the meeting to order at 7:30 a.m.

**1. Consent Agenda (A)**

*Any item will be removed from the consent agenda at the request of any member of the Board and that item will be considered separately later.*

- A. Minutes from March 21, 2024
- B. March 2024 Payables
- C. March 2024 Financials

Lamar moved for approval of the consent agenda as written, seconded by Beauchamp. Vote by Acclamation: Ayes: Unanimous (6). Nays: None. Abstentions: None. Motion carried.

**2. Public Comment**

*Members of the public may speak to the Board regarding matters NOT on the Agenda nor currently pending before the Moscow Urban Renewal Agency. Please state your name and resident city for the record and limit your remarks to three minutes.*

None.

**3. FY2025 MURA Budget Schedule Review (A) – Cody Riddle**

*The Agency has scheduled the FY 2025 Budget Hearing for August 1, 2024. Staff is recommending the following meeting dates to develop the budget and capital improvement plan in preparation for the August Hearing:*

- June 20, 2024 Board Review of Draft Budget and Capital Improvement Plan
- July 3, 2024 Finance Subcommittee Review of Final Draft Budget and Capital Improvement Plan
- July 18, 2024 Board Review of Final Draft Budget and Capital Improvement Plan (if needed)

Riddle reviewed the proposed schedule, as described above, and asked for feedback on the proposed dates. The Board asked some clarifying questions regarding the dates and times.

Tompkins moved to accept the proposed FY2025 Budget Schedule as proposed, seconded by Tribble. Roll Call Vote; Ayes: Unanimous (6). Nays: None. Abstentions: None. Motion carried.

**4. FY2025 Finance Subcommittee Membership (A) – Cody Riddle**

*Article IV, Section 2 of the Agency’s bylaws establishes the structure and responsibilities of a Finance Committee. This group is to be comprised of two board members and three individuals from the general community. The*

*Committee provides recommendations on the capital improvement plan, annual budget, and agency contributions to projects exceeding fifty-thousand dollars (\$50, 000). Jenny Ford, Jon Kimberling, and Dave Kiblen have agreed to continue serving as community members. Staff is seeking two board members to complete the committee.*

Riddle provided a brief review of the Finance Subcommittee members, seen above, that were approved last year, and requested approval for the Subcommittee this year. The Board members were advised to nominate two Board positions for the Subcommittee, and the time commitment for those appointments were described.

Steve McGeehan, Nancy Tribble, and Alison Tompkins all volunteered to represent the Board on the Subcommittee. There was a discussion about the date and time of the proposed Subcommittee meeting.

Tompkins moved to appoint Steve McGeehan, Nancy Tribble, Jenny Ford, Jon Kimberling, and Dave Kiblen as the FY2025 Finance Subcommittee, seconded by Beauchamp. Roll Call Vote; Ayes: Unanimous (6). Nays: None. Abstentions: None. Motion carried.

**5. General Agency Updates – Cody Riddle**

- *General agency business*

Staff would like to schedule time on a future agenda to discuss a Strategic Plan update and requested that the Board communicate their availability for the regular meetings over the summer.

A Legacy Crossing property update will be brought before the Board in the next month or two.

**The meeting adjourned at 7:41 a.m.**

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Steve McGeehan, Agency Chair

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Date



**Balance Sheet**  
**April 30, 2024**

	<u>Total Funds</u>
<b>ASSETS</b>	
Cash	14,669
Investments - LGIP	3,345,029
Investments-Zions Debt Reserve	44,536
Other Assets	5,260
Land	679,420
<b>Total Assets</b>	<u><u>\$ 4,088,914</u></u>
 <b>LIABILITIES</b>	
Deposits Payable	-
Series 2010 Bond - due within one year	37,000
Latah County payback agreement - due within one year	5,000
Series 2010 Bond - due after one year	121,000
Latah County payback agreement - due after one year	74,537
Total Liabilities	<u>237,537</u>
 <b>FUND BALANCES</b>	
Net Investment in Capital Assets	521,420
Restricted Fund Balance	44,312
Unrestricted Fund Balance	3,285,645
Total Fund Balance	<u>3,851,377</u>
<b>Total Liabilities and Fund Balance</b>	<u><u>\$ 4,088,914</u></u>

April-24  
Checks by Date



Check Number	Vendor	Description	Check Date	Check Amount
4932	UCITYMOS 15911-03312024	City of Moscow Mar'24 Utilities 6th & Jackson	04/04/2024	331.47
Total for Check Number 4932:				331.47
4933	MOSCOWH HOTEL03072024	Moscow Hotel, LLC Lilly Skandalos ENA Deposit 3.7.24	04/04/2024	5,000.00
Total for Check Number 4933:				5,000.00
4934	UAVISTA 1563734669-04182024	Avista Utilities Mar'24 Electric for Legacy Property	04/11/2024	52.93
Total for Check Number 4934:				52.93
4935	UCITYMOS 2400002118	City of Moscow City Admin Fees Apr'24	04/11/2024	4,750.42
Total for Check Number 4935:				4,750.42
4936	UMOSPULD 177948	Tribune Publishing Company URA Annual Report '23 Filing	04/11/2024	37.36
Total for Check Number 4936:				37.36
<b>Total bills for April 2024:</b>				<b><u>\$ 10,172.18</u></b>

April-24  
 Accounts Payable Checks for Approval



Check	Check Date	Fund Name	Vendor	Void	Amount
4932	04/04/2024	Moscow Urban Renewal Agency	City of Moscow		331.47
4933	04/04/2024	Moscow Urban Renewal Agency	Moscow Hotel, LLC		5,000.00
4934	04/11/2024	Moscow Urban Renewal Agency	Avista Utilities		52.93
4935	04/11/2024	Moscow Urban Renewal Agency	City of Moscow		4,750.42
4936	04/11/2024	Moscow Urban Renewal Agency	Tribune Publishing Company		37.36
Report Total:				\$ -	<u>10,172.18</u>

\_\_\_\_\_  
 Steve McGeehan, Chairperson

\_\_\_\_\_  
 Cody Riddle, Executive Director

Accounts payable expenditures as contained herein were made in compliance with the duly adopted budget for the current fiscal year and according to Idaho law.

\_\_\_\_\_  
 Renee Tack, Treasurer

General Ledger  
Expense vs. Budget

April-24



<b>Account</b>	<b>Description</b>	<b>Amended Budget</b>	<b>Period Amt</b>	<b>End Bal</b>	<b>Variance</b>	<b>% Budget Used</b>
	URA General Fund					
890-880-642-00	Administrative Services	\$ 57,005.00	\$ 4,750.42	\$ 33,252.94	\$ 23,752.06	58.33%
890-880-642-15	Professional Services-Other	\$ 5,000.00	\$ -	\$ 1,275.00	\$ 3,725.00	25.50%
890-880-642-20	Professional Services-Auditing	\$ 5,871.00	\$ -	\$ -	\$ 5,871.00	0.00%
890-880-642-89	Professional Services	\$ 525.00	\$ -	\$ 19.95	\$ 505.05	3.80%
890-880-644-10	Advertising & Publishing	\$ 500.00	\$ 37.36	\$ 84.80	\$ 415.20	16.96%
890-880-668-10	Liability Insurance-General	\$ 1,950.00	\$ -	\$ 2,172.00	\$ (222.00)	111.38%
	Contractual	\$ 70,851.00	\$ 4,787.78	\$ 36,804.69	\$ 34,046.31	51.95%
890-880-631-10	Postage Expense	\$ 100.00	\$ -	\$ -	\$ 100.00	0.00%
890-880-631-20	Printing and Binding	\$ 400.00	\$ -	\$ -	\$ 400.00	0.00%
890-880-647-10	Travel & Meetings-General	\$ 500.00	\$ -	\$ -	\$ 500.00	0.00%
890-880-649-10	Professional Development	\$ 500.00	\$ -	\$ -	\$ 500.00	0.00%
890-880-669-10	Misc. Expense-General	\$ 500.00	\$ -	\$ 22.50	\$ 477.50	4.50%
	Commodities	\$ 2,000.00	\$ -	\$ 22.50	\$ 1,977.50	1.13%
	URA General Fund - Total	\$ 72,851.00	\$ 4,787.78	\$ 36,827.19	\$ 36,023.81	50.55%

General Ledger  
Expense vs. Budget

April-24



Account	Description	Amended Budget	Period Amt	End Bal	Variance	% Budget Used
	URA Legacy District					
890-895-642-10	Professional Services-Legacy	\$ 5,150.00	\$ -	\$ -	\$ 5,150.00	0.00%
890-895-642-12	Land Sale Expense-Legacy	\$ 2,060.00	\$ -	\$ -	\$ 2,060.00	0.00%
890-895-644-10	Ad. & Marketing Expense-Legacy	\$ 1,030.00	\$ -	\$ -	\$ 1,030.00	0.00%
	Contractual	\$ 8,240.00	\$ -	\$ -	\$ 8,240.00	0.00%
890-895-647-10	Travel & Meetings-Legacy	\$ 515.00	\$ -	\$ -	\$ 515.00	0.00%
890-895-652-10	Heat, Lights & Utilities	\$ 4,635.00	\$ 384.40	\$ 2,314.92	\$ 2,320.08	49.94%
890-895-658-51	Development Participation	\$ 870,000.00	\$ -	\$ -	\$ 870,000.00	0.00%
890-895-669-10	Misc. Expense-Legacy	\$ 515.00	\$ -	\$ -	\$ 515.00	0.00%
890-895-675-00	Fiscal Agent Trustee fees	\$ 1,500.00	\$ -	\$ -	\$ 1,500.00	0.00%
890-895-676-15	Latah County Reimb. Agreement	\$ 5,000.00	\$ -	\$ -	\$ 5,000.00	0.00%
890-895-676-17	Owner Participation Agreements	\$ 63,490.00	\$ -	\$ 22,712.62	\$ 40,777.38	35.77%
	Commodities	\$ 945,655.00	\$ 384.40	\$ 25,027.54	\$ 920,627.46	2.65%
890-895-890-00	Transfer To: General Fund	\$ 72,851.00	\$ -	\$ -	\$ 72,851.00	0.00%



General Ledger  
Expense vs. Budget

April-24



Account	Description	Amended		End Bal	Variance	% Budget Used
		Budget	Period Amt			
	Transfers To	\$ 72,851.00	\$ -	\$ -	\$ 72,851.00	0.00%
890-895-900-11	Contingency - Legacy	\$ 15,000.00	\$ -	\$ -	\$ 15,000.00	0.00%
	Contingency	\$ 15,000.00	\$ -	\$ -	\$ 15,000.00	0.00%
	URA Legacy District - Total	\$ 1,041,746.00	\$ 384.40	\$ 25,027.54	\$ 1,016,718.46	2.40%
890-892-790-01	Bond Principal - Legacy	\$ 37,000.00	\$ -	\$ -	\$ 37,000.00	0.00%
890-892-791-01	Bond Interest - Legacy	\$ 6,936.00	\$ -	\$ 415.48	\$ 6,520.52	5.99%
	Debt Service - Total	\$ 43,936.00	\$ -	\$ 415.48	\$ 43,520.52	0.95%
890-892-900-01	Ending Fund Bal - Assigned	\$ 999,103.00	\$ -	\$ -	\$ 999,103.00	0.00%
890-892-990-05	Ending Fund Bal - Restricted	\$ 49,752.00	\$ -	\$ -	\$ 49,752.00	0.00%
890-899-990-00	Ending Fund Bal - Unassigned	\$ 190,391.00	\$ -	\$ -	\$ 190,391.00	0.00%
	Ending Fund Balance - Total	\$ 1,239,246.00	\$ -	\$ -	\$ 1,239,246.00	0.00%
TOTAL	Moscow Urban Renewal Agency	\$ 2,397,779.00	\$ 5,172.18	\$ 62,270.21	\$ 2,335,508.79	2.60%

General Ledger  
Revenue Analysis

April 2024



Account Number	Description	Budgeted Revenue	Period Revenue	YTD Revenue	Variance	Uncollected Bal	% Avail/Uncollect	% Received
<b>890</b>	<b>Moscow Urban Renewal Agency</b>							
890-000-410-01	Property Taxes - Legacy	\$ 988,278.00	\$ 405.92	\$ 664,357.39	\$ 323,920.61	\$ 323,920.61	32.78%	67.22%
890-000-471-00	Investment Earnings	\$ 45,000.00	\$ 15,064.63	\$ 77,730.13	\$ (32,730.13)	\$ (32,730.13)	-72.73%	172.73%
890-000-498-96	Transfer In: Legacy	\$ 72,851.00	\$ -	\$ -	\$ 72,851.00	\$ 72,851.00	100.00%	0.00%
<b>890</b>	<b>Moscow Urban Renewal Agency</b>	<b>\$ 1,106,129.00</b>	<b>\$ 15,470.55</b>	<b>\$ 742,087.52</b>	<b>\$ 364,041.48</b>	<b>\$ 364,041.48</b>	<b>32.91%</b>	<b>67.09%</b>
<b>Revenue Total</b>		<b>\$ 1,106,129.00</b>	<b>\$ 15,470.55</b>	<b>\$ 742,087.52</b>	<b>\$ 364,041.48</b>	<b>\$ 364,041.48</b>	<b>32.91%</b>	<b>67.09%</b>



# Fiscal Year 2025 Adopted Budget

Fiscal Year Beginning October 1, 2024 Ending September 30, 2025

## Commissioners:

Steven McGeehan, Chair  
Mark Beauchamp, Vice-Chair  
Nancy Tribble, Secretary  
Alison Tompkins, Commissioner

Drew Davis, Commissioner  
Tom Lamar, Commissioner  
Sandra Kelly, Commissioner

## Administration:

Cody Riddle, Executive Director  
Jennifer Fleischman, Clerk

Renee Tack, Treasurer

Moscow Urban Renewal Agency  
 Budget Summary  
 2023 - 2024

# BUDGET SUMMARY

ACCOUNT AND ACCOUNT CLASSIFICATION DESCRIPTION	2021-22 ACTIVITY	2022-23 ACTIVITY	2023-24 AMENDED BUDGET	2024-25 DEPT REQUESTED BUDGET	2024-25 PROPOSED BUDGET	2024-25 ADOPTED BUDGET
<b>ESTIMATED REVENUES</b>						
410-01 Property Taxes - Legacy	876,060	841,139	988,278	980,000	980,000	980,000
471-00 Investment Earnings	15,035	114,194	45,000	100,001	100,001	100,001
478-10 Gain/Loss On Sale Of Assets	(31,234)					
498-96 Transfer In: Legacy	62,698	64,929	72,851	75,218	75,218	75,218
910-00 Beg Fund Balance - Unassigned			145,391	327,205	327,205	327,205
912-00 Beg Fund Balance - Assigned - Legacy			1,096,507	1,592,616	1,592,616	1,592,616
912-01 Beg Fund Balance - Restricted - Legacy			49,752	49,752	49,752	49,752
<b>TOTAL ESTIMATED REVENUES</b>	<b>922,559</b>	<b>1,020,262</b>	<b>2,397,779</b>	<b>3,124,792</b>	<b>3,124,792</b>	<b>3,124,792</b>

Moscow Urban Renewal Agency  
Budget Summary  
2023 - 2024

ACCOUNT AND ACCOUNT CLASSIFICATION DESCRIPTION	2021-22 ACTIVITY	2022-23 ACTIVITY	2023-24 AMENDED BUDGET	2024-25 DEPT REQUESTED BUDGET	2024-25 PROPOSED BUDGET	2024-25 ADOPTED BUDGET
<b>APPROPRIATIONS</b>						
E02 Contractual	67,942	72,315	77,561	80,131	80,131	80,131
E03 Commodities	113,273	487,053	949,185	873,410	873,410	873,410
E05 Debt Service	4,515	3,167	43,936	44,312	44,312	44,312
E10 Transfers To	62,698	64,929	72,851	75,218	75,218	75,218
E20 Other Financing Uses	321,703					
E90 Contingency			15,000	15,000	15,000	15,000
E95 Ending Fund Balance			1,239,246	2,036,721	2,036,721	2,036,721
<b>TOTAL APPROPRIATIONS</b>	<b>570,131</b>	<b>627,464</b>	<b>2,397,779</b>	<b>3,124,792</b>	<b>3,124,792</b>	<b>3,124,792</b>
<b>NET OF REVENUES/APPROPRIATIONS - FUND 890</b>	<b>352,428</b>	<b>392,798</b>				

Moscow Urban Renewal Agency  
 General Agency Budget  
 2024 - 2025

# GENERAL AGENCY BUDGET

GL NUMBER	DESCRIPTION	2021-22 ACTIVITY	2022-23 ACTIVITY	2023-24 AMENDED BUDGET	2024-25 DEPT REQUESTED BUDGET	2024-25 PROPOSED BUDGET	2024-25 ADOPTED BUDGET
ESTIMATED REVENUES							
Dept 000							
INVESTMENT EARNINGS							
890-000-471-00	Investment Earnings	15,035	114,194	45,000	100,001	100,001	100,001
	Interest earned on investments based on the expected interest rate and balances in the Agency's accounts.				100,001	100,001	100,001
	INVESTMENT EARNINGS	15,035	114,194	45,000	100,001	100,001	100,001
TRANSFERS IN							
890-000-498-96	Transfer In: Legacy	62,698	64,929	72,851	75,218	75,218	75,218
	Transfer to General Agency from Legacy to cover General Agency expenses.				75,218	75,218	75,218
	TRANSFERS IN	62,698	64,929	72,851	75,218	75,218	75,218
GAIN/LOSS ON SALE OF ASSETS							
890-000-478-10	Gain/Loss On Sale Of Assets	(31,234)					
	GAIN/LOSS ON SALE OF ASSETS	(31,234)					
OTHER FINANCING SOURCES							
890-000-910-00	Beg Fund Balance - Unassigned			145,391	327,205	327,205	327,205
	Beginning Fund Balance-Unassigned is a resource available from income derived from sources other than tax increment generated by the Legacy District revenue allocation area. This resource is eligible for General Agency expenses.				327,205	327,205	327,205
	OTHER FINANCING SOURCES			145,391	327,205	327,205	327,205
	Totals for dept 000 -	46,499	179,123	263,242	502,424	502,424	502,424
	TOTAL ESTIMATED REVENUES	46,499	179,123	263,242	502,424	502,424	502,424

Moscow Urban Renewal Agency  
General Agency Budget  
2024 - 2025

GL NUMBER	DESCRIPTION	2021-22 ACTIVITY	2022-23 ACTIVITY	2023-24 AMENDED BUDGET	2024-25 DEPT REQUESTED BUDGET	2024-25 PROPOSED BUDGET	2024-25 ADOPTED BUDGET
APPROPRIATIONS							
Dept 880 - URA - General Agency							
CONTRACTUAL							
890-880-642-00	Administrative Services	53,732	55,345	57,005	58,716	58,716	58,716
	Reimbursement to the City of Moscow for executive, administrative, finance, legal, and other services.				58,716	58,716	58,716
890-880-642-15	Professional Services - Other	1,520	1,250	5,000	5,000	5,000	5,000
	Professional Services including legal services fees, dues, and memberships, including the Redevelopment Association of Idaho.				5,000	5,000	5,000
890-880-642-20	Professional Services - Auditing	5,200	5,700	5,871	6,047	6,047	6,047
	Expenses related to the annual financial audit.				6,047	6,047	6,047
890-880-642-89	Professional Services - URA	420	420	525	541	541	541
	Annual shared cost for Website hosting and support.				541	541	541
890-880-644-16	Land Sale Expenses	1,060					
890-880-668-10	Insurance	1,780	1,889	1,950	2,400	2,400	2,400
	Annual insurance premium for liability and errors and omissions for public officials.				2,400	2,400	2,400
CONTRACTUAL		63,712	64,604	70,351	72,704	72,704	72,704
COMMODITIES							
890-880-631-10	Postage Expense			100	100	100	100
	Annual Postage Expense.				100	100	100
890-880-631-20	Printing & Binding	46		400	400	400	400
	Annual costs for Printing and Binding.				400	400	400
890-880-644-10	Advertising & Publishing		249	500	515	515	515
	Costs related to general advertising and marketing.				515	515	515
890-880-644-15	Alturas Marketing/Maintenance	137					
890-880-647-10	Travel & Meetings			500	500	500	500
	Commissioner's and/or support staff's travel and meeting expense related to the Agency's business.				500	500	500
890-880-649-10	Professional Development			500	500	500	500
	Expenses related to potential training costs for Executive Director, commissioners and other support staff as appropriate.				500	500	500
890-880-669-10	Miscellaneous Services & Charges		77	500	500	500	500
	Incidental expenses incurred by the Agency that are not captured in other categories.				500	500	500
COMMODITIES		183	326	2,500	2,515	2,515	2,515
OTHER FINANCING USES							
890-880-669-11	Dist. Of Net Prop. Sale Proceeds	321,703					

Moscow Urban Renewal Agency  
 General Agency Budget  
 2024 - 2025

GL NUMBER	DESCRIPTION	2021-22 ACTIVITY	2022-23 ACTIVITY	2023-24 AMENDED BUDGET	2024-25 DEPT REQUESTED BUDGET	2024-25 PROPOSED BUDGET	2024-25 ADOPTED BUDGET
APPROPRIATIONS							
Dept 880 - URA - General Agency							
OTHER FINANCING USES							
	OTHER FINANCING USES	321,703					
Totals for dept 880 - URA - General Agency		385,598	64,930	72,851	75,219	75,219	75,219



Moscow Urban Renewal Agency  
General Agency Budget  
2024 - 2025

GL NUMBER	DESCRIPTION	2021-22 ACTIVITY	2022-23 ACTIVITY	2023-24 AMENDED BUDGET	2024-25 DEPT REQUESTED BUDGET	2024-25 PROPOSED BUDGET	2024-25 ADOPTED BUDGET
APPROPRIATIONS							
Dept 899 - URA - Debt Service							
ENDING FUND BALANCE							
890-899-990-00	Ending Fund Balance - Unassigned			190,391	427,205	427,205	427,205
					427,205	427,205	427,205
Ending Fund Balance-Unassigned is the funds remaining after all projected expenditures are made against all resources available during the fiscal year. These are monies derived from sources other than tax increment generated by the Legacy Crossing District revenue allocation area.							
ENDING FUND BALANCE				190,391	427,205	427,205	427,205
Totals for dept 899 - URA - Debt Service				190,391	427,205	427,205	427,205
TOTAL APPROPRIATIONS		385,598	64,930	263,242	502,424	502,424	502,424
NET OF REVENUES/APPROPRIATIONS - FUND 890		(339,099)	114,193				

Moscow Urban Renewal Agency  
 Legacy Crossing Budget  
 2024 - 2025

# LEGACY CROSSING BUDGET

GL NUMBER	DESCRIPTION	2021-22 ACTIVITY	2022-23 ACTIVITY	2023-24 AMENDED BUDGET	2024-25 DEPT REQUESTED BUDGET	2024-25 PROPOSED BUDGET	2024-25 ADOPTED BUDGET
ESTIMATED REVENUES							
Dept 000							
PROPERTY TAXES							
890-000-410-01	Property Taxes - Legacy	876,060	841,139	988,278	980,000	980,000	980,000
	Property Taxes				980,000	980,000	980,000
	Tax increment revenues from the Legacy allocation area.						
PROPERTY TAXES		876,060	841,139	988,278	980,000	980,000	980,000
OTHER FINANCING SOURCES							
890-000-912-00	Beg Fund Balance - Assigned - Legacy			1,096,507	1,592,616	1,592,616	1,592,616
	Beginning Fund Balance-Assigned-Legacy is derived from tax increment generated by the Legacy tax allocation area.				1,592,616	1,592,616	1,592,616
890-000-912-01	Beg Fund Balance - Restricted - Legacy			49,752	49,752	49,752	49,752
	These funds are restricted as required for the Legacy Crossing bond payment reserve (\$44,312) and the 6th & Jackson environmental remediation escrow account (\$5,260).				49,752	49,752	49,752
OTHER FINANCING SOURCES				1,146,259	1,642,368	1,642,368	1,642,368
Totals for dept 000 -		876,060	841,139	2,134,537	2,622,368	2,622,368	2,622,368
TOTAL ESTIMATED REVENUES		876,060	841,139	2,134,537	2,622,368	2,622,368	2,622,368

Moscow Urban Renewal Agency  
Legacy Crossing Budget  
2024 - 2025

GL NUMBER	DESCRIPTION	2021-22 ACTIVITY	2022-23 ACTIVITY	2023-24 AMENDED BUDGET	2024-25 DEPT REQUESTED BUDGET	2024-25 PROPOSED BUDGET	2024-25 ADOPTED BUDGET
APPROPRIATIONS							
Dept 892 - URA - Debt Service							
DEBT SERVICE							
890-892-790-01	Bond Principal			37,000	39,000	39,000	39,000
					39,000	39,000	39,000
	The Series 2010A Bonds were issued in the aggregate principal amount of \$510,000, payable on September 1st annually with final maturity on September 1, 2027 or until called on a prior redemption.						
890-892-791-01	Bond Interest	4,515	3,167	6,936	5,312	5,312	5,312
					5,312	5,312	5,312
	The average coupon rate for the 2010A bond series is 4.527%						
	DEBT SERVICE	4,515	3,167	43,936	44,312	44,312	44,312
ENDING FUND BALANCE							
890-892-990-01	Ending Fund Balance - Assigned			999,103	1,559,764	1,559,764	1,559,764
					1,559,764	1,559,764	1,559,764
	Ending Fund Balance-Assigned is a resource available from income derived from tax income generated by the Legacy tax allocation.						
890-892-990-05	Ending Fund Balance - Restricted			49,752	49,752	49,752	49,752
					49,752	49,752	49,752
	This resource is restricted for escrow for the environmental remediation of the 6th & Jackson property and the bond payment reserve.						
	ENDING FUND BALANCE			1,048,855	1,609,516	1,609,516	1,609,516
	Totals for dept 892 - URA - Debt Service	4,515	3,167	1,092,791	1,653,828	1,653,828	1,653,828

Moscow Urban Renewal Agency  
Legacy Crossing Budget  
2024 - 2025

GL NUMBER	DESCRIPTION	2021-22 ACTIVITY	2022-23 ACTIVITY	2023-24 AMENDED BUDGET	2024-25 DEPT REQUESTED BUDGET	2024-25 PROPOSED BUDGET	2024-25 ADOPTED BUDGET
APPROPRIATIONS							
Dept 895 - URA - Legacy District							
CONTRACTUAL							
890-895-642-10	Professional Services	2,723	7,161	5,150	5,305	5,305	5,305
	Expenses related to general, legal and other miscellaneous professional services.				5,305	5,305	5,305
890-895-642-12	Land Sale Expense	1,507	550	2,060	2,122	2,122	2,122
	Costs associated with the sale of 6th & Jackson property.				2,122	2,122	2,122
CONTRACTUAL		4,230	7,711	7,210	7,427	7,427	7,427
COMMODITIES							
890-895-644-10	Advertising & Publishing		689	1,030	1,061	1,061	1,061
	Advertising and marketing expenses the Agency may incur in relation to the Legacy Crossing District.				1,061	1,061	1,061
890-895-647-10	Travel & Meetings			515	530	530	530
	Executive Director, Commissioners and/or support staff's travel and meetings expense directly related to Legacy Crossing.				530	530	530
890-895-652-10	Heat, Lights & Utilities	4,705	4,431	4,635	4,774	4,774	4,774
	Utilities directly related to the property located at 6th & Jackson.				4,774	4,774	4,774
890-895-658-51	Development Participation	47,407	433,093	870,000	798,000	798,000	798,000
	Expenses related to public improvement and other development participation within the Legacy Crossing District that is not related to an Owner Participation Agreement as detailed in the Agency's adopted Capital Improvement Plan. Projects for FY2025 include:				798,000	798,000	798,000
	Legacy Public Infrastructure	\$275,000					
	Legacy Streetscape	\$50,000					
	Legacy Placemaking	\$37,000					
	Legacy Special Projects	\$436,000					
890-895-669-10	Miscellaneous Services & Charges	350	392	515	530	530	530
	Expenses directly related to the Legacy Crossing District not specifically covered in other line items.				530	530	530
890-895-675-00	Fiscal Agent Fees	1,500	1,500	1,500	1,500	1,500	1,500
	Annual fees associated with the Bond held by the Agency for the 6th & Jackson property within Legacy Crossing.				1,500	1,500	1,500
890-895-676-15	Latah County Reimb Agreement			5,000	5,000	5,000	5,000
	In 2012 the Latah County Assessor's Office discovered a miscalculation in assessments resulting in reduced tax increment revenue. An agreement with Latah County was negotiated to repay the mistaken overage of \$115,000. The repayment schedule is attached as Exhibit C.				5,000	5,000	5,000
890-895-676-17	Owner Participation Agreements	59,128	46,622	63,490	59,500	59,500	59,500
	Owner Participation Agreements between the Agency and owners/developers are based on 50% of increment generated from the remodeled/repurposed property (50% of the increment will be retained by the Agency). Participants in 2025 include: Gritman Medical, Larry Swanger and Anderson Group LLC.				59,500	59,500	59,500
COMMODITIES		113,090	486,727	946,685	870,895	870,895	870,895

Moscow Urban Renewal Agency  
 Legacy Crossing Budget  
 2024 - 2025

GL NUMBER	DESCRIPTION	2021-22 ACTIVITY	2022-23 ACTIVITY	2023-24 AMENDED BUDGET	2024-25 DEPT REQUESTED BUDGET	2024-25 PROPOSED BUDGET	2024-25 ADOPTED BUDGET
APPROPRIATIONS							
Dept 895 - URA - Legacy District							
TRANSFERS TO							
890-895-890-00	Transfer To: General Fund	62,698	64,929	72,851	75,218	75,218	75,218
	Transfer to the General Agency to cover administrative and general expenses.				75,218	75,218	75,218
TRANSFERS TO		62,698	64,929	72,851	75,218	75,218	75,218
CONTINGENCY							
890-895-900-11	Operating Contingency			15,000	15,000	15,000	15,000
	Contingency for Legacy Crossing District to address unanticipated shortfalls in either revenue or expenses.				15,000	15,000	15,000
CONTINGENCY				15,000	15,000	15,000	15,000
Totals for dept 895 - URA - Legacy District		180,018	559,367	1,041,746	968,540	968,540	968,540
TOTAL APPROPRIATIONS		184,533	562,534	2,134,537	2,622,368	2,622,368	2,622,368
NET OF REVENUES/APPROPRIATIONS - FUND 890		691,527	278,605				

**Incremental Assessed Valuation and Revenue by District**

The Agency has no direct taxing power. The amount of revenue received from property taxes is determined by the amount of taxable property value and by the aggregate tax rate that the taxing entities within the Revenue Allocation Area set. The Agency receives the taxes collected on the increased valuation of property in the Revenue Allocation area. These taxes have increased since the base year (1997).

**Alturas Technology Park Incremental Assessed Valuation and Revenue**

<u>Year</u>	<u>Property Valuation</u>	<u>Tax Revenue</u>
1997	\$412,961	\$0
1998	\$2,152,755	\$8,715
1999	\$3,035,029	\$37,802
2000	\$6,733,645	\$55,711
2001	\$7,870,259	\$122,694
2002	\$7,791,240	\$142,102
2003	\$9,154,368	\$158,102
2004	\$12,532,351	\$182,716
2005	\$13,902,634	\$216,171
2006	\$15,874,049	\$226,213
2007	\$16,528,808	\$267,176
2008	\$17,743,264	\$272,758
2009	\$22,026,234	\$310,320
2010	\$20,959,640	\$365,086
2011	\$20,515,349	\$349,530
2012	\$21,909,743	\$344,205
2013	\$22,015,034	\$394,093
2014	\$20,923,376	\$393,705
2015	\$0	\$407,516
<b>2016</b>	<b>\$0</b>	<b>\$0</b>

**Legacy Crossing Incremental Assessed Valuation and Revenue**

<u>Tax Year</u>	<u>Property Valuation</u>	<u>Tax Revenue</u>
2008	Base Year	\$0
2009	\$3,345,847	\$53,020
2010	\$8,377,408	\$129,830
2011	\$8,958,913	\$144,052
2012	\$5,449,902	\$97,548
2013	\$5,757,256	\$116,809
2014	\$8,170,320	\$179,241
2015	\$8,760,571	\$179,552
2016	\$9,097,017	\$179,343
2017	\$11,903,272	\$228,176
2018	\$20,267,003	\$443,686
2019	\$42,649,716	\$747,641
2020	\$47,124,123	\$794,408
2021	\$53,461,248	\$876,060
2022	\$68,073,934	\$841,139
2023	\$89,042,452	\$1,513,722 (Estimated)
2024	TBD	TBD

**URA Legacy Bond Schedule**

<b>URA LEGACY SERIES 2010A BOND SCHEDULE:</b>						
<b>AMORTIZATION:</b>		<b>Urban Renewal Agency of the City of Moscow</b>				
	AMOUNT AMORTIZED	<b>\$510,000.00</b> Balance Forward				
	INTEREST RATE	Average Coupon 4.526599%				
	PAYMENT	ANNUAL Principal + Interest				
	MATURITY	September. 1, 2027				
DATE	PMT #	Int. Rate	PMT AMT	INTEREST	PRINCIPAL	BALANCE
<b>13-Aug-10</b>	<b>0</b>			<b>Balance Forward</b>		<b>\$510,000.00</b>
01-Sep-11	1	3.64%	\$44,104.46	\$24,104.46	\$20,000.00	\$490,000.00
01-Sep-12	2	3.65%	\$44,107.80	\$22,107.80	\$22,000.00	\$468,000.00
01-Sep-13	3	3.91%	\$43,304.80	\$21,304.80	\$22,000.00	\$446,000.00
01-Sep-14	4	4.17%	\$43,444.60	\$20,444.60	\$23,000.00	\$423,000.00
01-Sep-15	5	4.39%	\$43,485.50	\$19,485.50	\$24,000.00	\$399,000.00
01-Sep-16	6	4.58%	\$43,431.90	\$18,431.90	\$25,000.00	\$374,000.00
01-Sep-17	7	4.77%	\$44,286.90	\$17,286.90	\$27,000.00	\$347,000.00
01-Sep-18	8	5.03%	\$43,999.00	\$15,999.00	\$28,000.00	\$319,000.00
01-Sep-19	9	5.29%	\$43,590.60	\$14,590.60	\$29,000.00	\$290,000.00
01-Sep-20	10	5.44%	\$44,056.50	\$13,056.50	\$31,000.00	\$259,000.00
01-Sep-21	11	4.39%	\$43,370.10	\$11,370.10	\$32,000.00	\$227,000.00
01-Sep-22	12	4.39%	\$43,965.30	\$9,965.30	\$34,000.00	\$193,000.00
01-Sep-23	13	4.39%	\$43,472.70	\$8,472.70	\$35,000.00	\$158,000.00
01-Sep-24	14	4.39%	\$43,936.20	\$6,936.20	\$37,000.00	\$121,000.00
01-Sep-25	15	4.39%	\$44,311.90	\$5,311.90	\$39,000.00	\$82,000.00
01-Sep-26	16	4.39%	\$43,599.80	\$3,599.80	\$40,000.00	\$42,000.00
01-Sep-27	17	4.39%	\$43,843.80	\$1,843.80	\$42,000.00	\$0.00
<b>GRAND TOTAL</b>			<b>\$744,311.86</b>	<b>\$234,311.86</b>	<b>\$510,000.00</b>	

**Latah County  
Tax Increment  
Repayment  
Schedule**

<b>1-Jan-2015</b>	<b>\$4,000</b>
<b>1-Jan-2016</b>	<b>\$2,000</b>
<b>1-Jan-2017</b>	<b>\$3,500</b>
<b>1-Jan-2018</b>	<b>\$3,500</b>
<b>1-Jan-2019</b>	<b>\$3,500</b>
<b>1-Jan-2020</b>	<b>\$3,500</b>
<b>1-Jan-2021</b>	<b>\$5,000</b>
<b>1-Jan-2022</b>	<b>\$5,000</b>
<b>1-Jan-2023</b>	<b>\$5,000</b>
<b>1-Jan-2024</b>	<b>\$5,000</b>
1-Jan-2025	\$5,000
1-Jan-2026	\$10,000
1-Jan-2027	\$12,000
1-Jan-2028	\$23,000
1-Jan-2029	\$24,537
<b>Total</b>	<b>\$114,537</b>



# FY 2025 CAPITAL IMPROVEMENT PLAN

## 2025-2029 Legacy Crossing District Capital Improvement Plan

### Community Infrastructure Projects

Project Name	Project Description	Project Cost	Agency Contribution	Construction Year	Status	2025	2026	2027	2028	2029
<b>Street Projects</b>										
Main Street Surface Restoration	Grind and inlay of Main Street Surface (Between 6th and 8th)	\$ 226,418	\$ 100,000	2028	Planned				\$ 100,000	
District Pavement Improvements	Miscellaneous small-scale pavement improvement projects	Varies	Varies	Varies	Committed	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000
<b>Water Projects</b>										
Downtown Transmission Phase III	Replacement of approx. 2,000' of 24" water main between Polk and Jackson	\$ 1,181,128	\$ 106,000	2026	Planned		\$ 106,000			
A Street Transmission Phase III	Replacement of 8" main with 16" (Home to Asbury)	\$ 783,022	\$ 184,000	2027	Planned			\$ 184,000		
A Street Transmission Phase IV	Replacement of 8" main with 16" (Asbury to Jackson)	\$ 255,713	\$ 127,000	2028	Planned				\$ 127,000	
District Fire Hydrant Replacement	Replacement of fire hydrants in excess of 50 years old	Varies	Varies	Varies	Committed	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000
<b>Sanitary Sewer Projects</b>										
Sewer Main Replacement (Alley W. of Main, 4th to 6th)	Replacement of failing sewer line serving downtown	\$ 381,100	\$ 190,000	2025	Committed	\$ 190,000				
Sanitary Sewer Manhole Replacements	Replacement of aged brick or block sewer manholes with new precast manholes to reduce amount of infiltration and inflow	Varies	Varies	Varies	Committed	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000
<b>Community Infrastructure Projects Total</b>		<b>\$ 2,827,381</b>	<b>\$ 707,000</b>			<b>\$ 275,000</b>	<b>\$ 191,000</b>	<b>\$ 269,000</b>	<b>\$ 312,000</b>	<b>\$ 85,000</b>

### Streetscape Enhancement Projects

Project Name	Project Description	Project Cost	Agency Contribution	Construction Year	Status	2025	2026	2027	2028	2029
Downtown Streetscape Improvements (Phase One)	Work includes curbs, gutter, sidewalk, street, lighting and street furnishing improvements	\$ 3,350,000	\$ 1,675,000	2028	Planned			\$ 175,000	\$ 1,500,000	
General Streetscape Improvements	General Streetscape enhancement projects within the District	Varies	Varies	Varies	Committed	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000
<b>Streetscape Enhancement Projects Total</b>		<b>\$ 3,350,000</b>	<b>\$ 1,675,000</b>			<b>\$ 50,000</b>	<b>\$ 50,000</b>	<b>\$ 225,000</b>	<b>\$ 1,550,000</b>	<b>\$ 50,000</b>

### Community Placemaking Projects

Project Name	Project Description	Project Cost	Agency Contribution	Construction Year	Status	2025	2026	2027	2028	2029
South Couplet Beautification Project	Streetscape and landscape enhancements per the 2015 City Beautification Plan	\$ 254,678	\$ 132,000	2026	Planned	\$ 12,000	\$ 120,000			
Public Art Installation	Public Art installations in various locations	Varies	Varies	Varies	Committed	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000	\$ 25,000
<b>Community Placemaking Projects Total</b>		<b>\$ 254,678</b>	<b>\$ 132,000</b>			<b>\$ 37,000</b>	<b>\$ 145,000</b>	<b>\$ 25,000</b>	<b>\$ 25,000</b>	<b>\$ 25,000</b>

### Special Projects

Project Name	Project Description	Project Cost	Agency Contribution	Construction Year	Status	2025	2026	2027	2028	2029
Sixth and Jackson Property Development	Hello Walk construction at Sixth and Jackson Property	\$ 236,000	\$ 236,000	2025	Committed	\$ 236,000				
South Main Underpass Construction	Construction of pedestrian underpass of South Main at Paradise Creek	\$ 1,100,000	\$ 200,000	2025	Planned	\$ 200,000				
Pedestrian and Bicycle Improvements	Development and construction of various pedestrian and bicycle pathways, facilities and lighting	Varies	Varies	Varies	Planned					
Paradise Path Lighting-Phase III	Installation of energy efficient LED pathway lighting on Paradise Path from College to 6th Street	\$ 142,000	\$ 50,000	2028	Planned				\$ 50,000	
<b>Special Projects Total</b>		<b>\$ 1,478,000</b>	<b>\$ 486,000</b>			<b>\$ 436,000</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 50,000</b>	<b>\$ -</b>



### Annual Investments

	2025	2026	2027	2028	2029
Community Infrastructure Projects	\$ 275,000	\$ 191,000	\$ 269,000	\$ 312,000	\$ 85,000
Streetscape Enhancement Projects	\$ 50,000	\$ 50,000	\$ 225,000	\$ 1,550,000	\$ 50,000
Community Placemaking Projects	\$ 37,000	\$ 145,000	\$ 25,000	\$ 25,000	\$ 25,000
Special Projects	\$ 436,000	\$ -	\$ -	\$ 50,000	\$ -
<b>TOTAL</b>	<b>\$ 798,000</b>	<b>\$ 386,000</b>	<b>\$ 519,000</b>	<b>\$ 1,937,000</b>	<b>\$ 160,000</b>
<b>Legacy Ending Fund Balance</b>	<b>\$1,559,764</b>	<b>\$2,006,309</b>	<b>\$2,295,590</b>	<b>\$1,228,278</b>	<b>\$2,029,340</b>

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## TECHNICAL MEMORANDUM

**To:** Steve Gill, IDEQ  
Derek Young, IDEQ

**cc:** Dana Harper, IDEQ

**From:** Brett McLees, Boise, Idaho  
Robin Nimmer, Moscow, Idaho

**Date:** May 31, 2024

**Alta Project No.:** 23114.006

**IDEQ Contract No.:** K305 Task Order 69-A

**Subject:** **Remediation Alternatives Analysis for the 6<sup>th</sup> and Jackson Street Property – Technical Memorandum**

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### Executive Summary

The overall goal of this Remediation Alternatives Analysis (RAA) for the Moscow Urban Renewal Agency's (URA) 6<sup>th</sup> and Jackson Street property in Moscow, Idaho is to reduce or eliminate exposures to physical, environmental, and health hazards at the Site for the proposed Site use. The current and anticipated future use of the Site is non-residential, however due to the varying nature of the proposed Site use both residential and non-residential was considered in the evaluation cleanup objectives. In addition, the following pathways were considered in the evaluation: direct contact, inhalation from vapor intrusion, ingestion, and protection of groundwater. Ammonia and Nitrate in groundwater exceeded the maximum Site-specific cleanup concentrations on site in MW-6 (farthest onsite downgradient well). The remedial goal is to prevent off-site migration and remediate groundwater to below MCLs and Site-specific cleanup criteria.

Remediation actions at the Site must provide for adequate protection of human health and the environment based on the current and future uses of the property. Remediation target levels will be defined by U.S. Environmental Protection Agency (EPA) MCLs and Site-specific cleanup criteria.

This RAA was performed to consider a range of reasonable and proven response actions and remediation alternatives based on contaminant concentrations, Site characteristics, current and proposed Site use, remediation goals, associated human health hazards, and potential exposure pathways.

Alta identified five remediation alternatives:

1. In-situ biological nitrification treatment.
2. A combination of contaminated soil removal with monitored natural attenuation.
3. A combination of excavation and biological nitrification treatment.
4. A combination of phytoremediation and water aeration.

5. No-Action.

**Conclusions & Recommendations**

Alternatives 1 through 4 were similarly ranked yet they each score differently within the listed evaluation categories. Alternatives 1 and 3 have a higher overall long-term effectiveness but are much more costly and produce higher disturbance to location operations, while alternative 4 has lower long-term effectiveness. Alternatives 4 and 5 appear to be the least effective alternatives. Alternative 1, in-situ injection of a biological nitrification agent, is the most cost-effective alternative in combination with having a relatively high likelihood of success (depending on the pilot study) while maintaining limited disturbance to location operations. Though, if concentrations in groundwater do not decrease over a span of a year, additional injections may be necessary to promote attenuation.

Based on site and budgetary constraints, Alta recommends consideration of clean-up alternative 1, ***In-situ Biological Nitrification Treatment***, which includes one year of subsequent groundwater monitoring to determine level of effectiveness to meet remediation goals.

## 1 Introduction

As part of the ongoing assessment for the project known as 6<sup>th</sup> & Jackson located at W. 6<sup>th</sup> Street and Jackson Street, Moscow, Idaho (Site), Alta Science & Engineering, Inc. (Alta) was tasked with creating a Remediation Analysis Alternatives (RAA) report for the Site. The purpose of this RAA is to briefly summarize information about the Site and provide remediation options to address contamination issues associated with the Site. The remedial alternatives are evaluated based on protection of human health and the environment, ease of implementation, cost of remediation, sustainability, ability to meet proposed land use, and compliance with applicable standards.

## 2 Site History and Previous Assessments

The 0.84-acre Site is located southwest of the intersection between W. 6<sup>th</sup> Street and Jackson Street in Moscow, Idaho, between Moscow's historic downtown district and the University of Idaho Campus. The Moscow Urban Renewal Agency (URA) currently owns the Site.

Historically, industrial agricultural businesses and storage of agricultural chemicals supported by the former railroad corridor occupied the Site. Most recently, a retail produce business operated on the northeast corner of the Site from about 2000 through 2010. All Site buildings have been removed and the Site is currently vacant and mostly unpaved, with the exception of a small paved area along the southwestern boundary.

Strata, Inc. (Strata) conducted Phase I Environmental Site Assessments (ESAs) in 2008 and 2010 which identified bulk storage of agricultural chemicals and a small heating oil underground storage tank (UST) in the eastern area of the site as recognized environmental conditions (RECs; Strata 2008 and 2010). Tetra Tech, Inc. (Tetra Tech) conducted a Phase II ESA in 2012 for soil and groundwater contamination based on these RECs (Tetra Tech 2013). They divided the site into three decision units (DUs; DU1, DU2, and DU3) based on historical practices at the Site. They further divided DU2 and DU3 into two and four subunits (SUs), respectively. Tetra Tech conducted the following work (Figure 1):

- Collected 20-point multi-increment surface soil samples from land surface to 6 inches below ground surface (bgs) from each of the SUs. The lab analyzed soil samples for herbicides, pesticides, and Resource Conservation and Recovery Act (RCRA) 8 metals.
- Advanced four soil borings at the monitoring well locations and collected subsurface soil samples. The lab analyzed soil samples for herbicides, pesticides, and RCRA 8 metals.
- Installed four monitoring wells. The lab analyzed groundwater samples for polycyclic aromatic hydrocarbons (PAHs), herbicides, RCRA 8 metals, nutrients (nitrate/nitrite as nitrogen, ammonia, and total phosphorus as phosphate), and pesticides.
- Removed the UST and collected five soil samples from the bottom and sidewalls of the UST basin. The lab analyzed the soil samples for volatile organic compounds (VOCs) and PAHs.

Tetra Tech's Phase II ESA findings indicated that several contaminants of potential concern (COPCs) in surface soil, subsurface soil, and groundwater exceeded their corresponding Idaho Initial Default Target Levels (IDTLs) listed in Appendix A of IDEQ's Risk Evaluation Manual (REM) (IDEQ 2018). As a result, Tetra Tech conducted a Site-specific risk assessment using the IDEQ REM (IDEQ 2018). The risk assessment analyzed the risk and hazard that contaminants found in the soil and groundwater may have on human health and the environment. Tetra Tech completed the Site-specific risk assessment on the entire site to obtain Remedial Action Target Levels-Scenario 1 (RATLs-1: residential conditions) for the COPCs. Site-specific risk assessment findings indicated that Dichlorodiphenyltrichloroethane (DDT) in the southern half of DU2 (the central site bulk chemical storage and railroad spur) and dieldrin in the northern half of DU2 were contaminants of concern (COCs) in soil less than 6 inches in depth.

Results from the Tetra Tech Phase II ESA groundwater sampling indicate the IDTLs are exceeded for nitrite/nitrate as nitrogen at all wells except S2-MW-01 (located in the southeast of the site), arsenic at all wells, and lead at S2-MW-03 (located in the northwest of the site). They calculated the groundwater gradient to be towards the northwest. Concentrations of nitrite/nitrate as nitrogen are highest at well S2-MW-04 (up-gradient well) located near the property boundary in the southwest area of the site, and concentrations decline down-gradient at well S2-MW-03. This suggests an up-gradient source. Well S2-MW-02 has the highest concentrations of total phosphorus and ammonia, neither of which has an IDTL. The source of nutrient concentrations at this well was unknown. Arsenic concentrations at all site wells and lead at S2-MW-03 are near the laboratory limits of quantitation.

TerraGraphics Environmental Engineering, Inc. (TerraGraphics) conducted follow-up sampling of DU2 in November 2013 to evaluate pesticide concentrations with depth to assist in guiding the remedial strategy. TerraGraphics divided DU2 into four SUs (SU-A to SU-D, from north to south) and collected composite samples below a depth of 6 inches from five discrete samples within each SU (TerraGraphics 2014a). The laboratory analyzed samples for DDT from discrete depths from 6 to 48 inches and dieldrin in the 6-to-12-inch depth. The laboratory did not detect dieldrin but did detect DDT in all samples except the sample from 36 to 48 inches bgs in SU-C. DDT and dieldrin concentrations in samples deeper than 6 inches did not exceed risk standards.

In a Memorandum dated August 1, 2014, TerraGraphics identified the following data gaps remaining from the previous studies (TerraGraphics 2014b).

- Nutrient concentrations in soil throughout DU3 and the above ground storage tank (AST) area of DU2.
- RCRA 8 metals concentrations in soil in the southern area of DU3.
- Pesticide concentrations in soil in DU3.
- Groundwater concentrations of RCRA 8 metals, pesticides, and nutrients in groundwater at existing wells and at two new wells: DU2 near the AST area and DU3 in the northwest corner of the site.

In 2014, the City of Moscow (City), contracted with Alta Science & Engineering, Inc. (Alta) to fill data gaps identified during the assessment activities during the previous assessment. Laboratory analysis indicates that several COCs were detected at concentrations in soil and groundwater which exceeded IDTL.

In 2015, the City contracted with Alta to implement the remedial action strategy presented in the Final Analysis of Brownfields Cleanup Alternatives [ABCA] and Remediation Work Plan [ABCA/Work Plan] for 217 & 317 W. 6<sup>th</sup> Street Moscow, Idaho (TerraGraphics 2015a) to address nitrate and ammonia concentrations in shallow groundwater and soils.

The ABCA/Work Plan identified remediation standards that ensure current or probable future risk to human health or the environment are eliminated or reduced, based on present and reasonably anticipated future uses of the Site. This work was completed as part of the Greater Moscow Area Coalition (the Coalition) Assessment Grant BF-00J24101 project and in compliance with the Voluntary Cleanup Program (VCP) agreement between the Idaho Department of Environmental Quality (IDEQ) and the Moscow URA.

In late 2015 and early 2016, Alta implemented remedial actions, including soil excavation, groundwater extraction system installation, and sodium lactate amendment injections (TerraGraphics 2016). The groundwater extraction system, which has been operating since February 2016, consists of three wells (EW-1, EW-2, and EW-3), each equipped with a dedicated 12-volt submersible pump which recovers groundwater from the well and discharges it into the City sanitary sewer. Alta designed the extraction system to remove nitrate- and ammonia-impacted groundwater and prevent it from migrating off the Site.

**Figure 1. Site Location Map**

### **3 Development of Remediation Goals and Objectives**

The following sections outline remediation goals and objectives for the Site.

#### **3.1 Current Land Use**

The Site is approximately 0.84 acres in size and is currently zoned “Exempt Property”. The Site is currently vacant, but historically has operated as industrial agricultural businesses and storage of agricultural chemicals. The Site is not connected to city water or sewer services.

#### **3.2 Anticipated Future Land Use**

Remediation target levels vary depending on whether the land use is residential or non-residential as defined by IDEQ’s Idaho Risk Evaluation Manual for Petroleum Releases (Petro REM) (IDEQ 2018). Therefore, evaluating current and reasonably likely future land uses at the Site is critical to determining cleanup target levels and potential exposure points, exposure pathways, and exposure factors. Remediation target levels will likely use both residential and non-residential variables due to the varying nature of the proposed Site use.

#### **3.3 Regional Land Use**

Moscow is located in Latah County, often referred to as “the Palouse.” The Palouse produces a large percentage of wheat, lentils, peas, oats, and barley in the U.S. While the majority of the land within Latah County is used for agricultural processes, the University of Idaho (located in Moscow, Idaho) and Washington State University (located 8 miles away in Pullman, Washington) are also an integral element of the community. The community, with a population of approximately 26,249 (<https://www.census.gov/quickfacts/fact/table/moscowcityidaho/LND110210>, accessed April 24, 2024), is located on US Highway 95.

Positioned directly south of the Site is Silos & Social, a restaurant built beneath old grain silos. To the north is Moscow Alehouse and Jimmy John’s Sandwiches. To the west is a large commercial multi-complex building consisting of multiple businesses. To the east Highway 95 separates the Site from Banner Bank.

#### **3.4 Water Use**

Currently, there are no production wells or drinking water wells located on Site. There are currently four shallow monitoring wells located on Site (MW-1 [upgradient], MW-3, MW-3A, and MW-6) used only for water quality monitoring. Alta field crew measured depth to groundwater in all four wells during the October 2023 groundwater characterization.

#### **3.5 Site Hazards and Contaminants of Concern**

Site sampling has shown that nitrate and ammonia in groundwater are present at the Site in concentrations that exceed EPA’s MCL for Nitrate and established Site-specific cleanup criteria for ammonia and are the recognized Site COCs. The following sections provide information on those COCs.



### **3.6 Remediation Goals and Objectives**

The overall goal of this RAA is to reduce or eliminate exposures to physical, environmental, and health hazards at the Site for the proposed Site use. The current and anticipated future use of the Site is non-residential, however due to the varying nature of the proposed Site use both residential and non-residential was considered in the evaluation cleanup objectives. In addition, the following pathways were considered in the evaluation: direct contact, inhalation from vapor intrusion, ingestion, and protection of groundwater. Impacted groundwater in excess of the MCLs and Site-specific cleanup criteria was discovered on site to the extent of MW-6 (farthest onsite downgradient well) and remediation goals therefore consider both onsite and offsite impacts. The goal will be achieved by remediating contaminated groundwater to below MCLs and Site-specific cleanup criteria.

Remediation actions at the Site must provide for adequate protection of human health and the environment based on the current and future uses of the property. Cleanup target levels will be defined by EPA MCLs and Site-specific cleanup criteria.

### **3.7 Identification of Remediation Alternatives**

The following analysis was performed to consider a range of reasonable and proven response actions and remediation alternatives based on contaminant concentrations, Site characteristics, current and proposed Site use, remediation goals, associated human health hazards, and potential exposure pathways. This section presents a compilation of potentially applicable technologies for the remediation of the identified COCs described in Section 3. The objective of this analysis is to identify alternatives to be evaluated further in Section 4.

For each of the potentially applicable alternatives, a brief description of the alternative and a short discussion of its advantages and disadvantages are presented.

Five options are considered for remediation of the Site:

1. In-situ biological nitrification treatment.
2. A combination of contaminated soil removal with monitored natural attenuation.
3. A combination of excavation and biological nitrification treatment.
4. A combination phytoremediation and water aeration.
5. No-Action.

#### **3.7.1 Clean-up Alternative 1 – In-situ Biological Nitrification**

##### *Description*

In-situ biological nitrification is a process used to treat ammonia in various environmental settings, including wastewater treatment plants, agricultural systems, and contaminated soils. It involves the sequential activity of specialized bacteria to convert ammonia ( $\text{NH}_4^+$ ) to nitrate ( $\text{NO}_3^-$ ).

One commonly used form of liquid biological nitrification is VitaStim Dynamic Duo made by Aquafix, Inc., used exclusively in municipal wastewater streams and plants to reduce ammonia and nitrate levels (Attachment A). VitaStim Dynamic Duo is a two-part product that is comprised of both ammonia assimilators and nitrifiers. The ammonia assimilators contain heterotrophic nitrifying bacteria that utilize both carbon and a high fraction of nitrogen. The nitrifiers contain high concentrations of ammonia and nitrite oxidizing bacteria as well as micronutrients to stimulate growth and reproduction of nitrifying bacteria. This two-step process contains bacteria to first oxidize ammonia to nitrite, and second, to oxidize nitrite to nitrate.

A pilot test is necessary to evaluate the effectiveness of this product in a natural system. The pilot test would involve two processes:

- 1) introducing a conservative tracer at the Site to evaluate groundwater flow, gradient, and system performance while the groundwater extraction system is running and
- 2) introduce VitaStim Dynamic Duo to the three onsite extraction wells (EW-1, EW-2, and EW-3, Figure 2).

Prior to and after the application of VitaStim Dynamic Duo, test the downgradient compliance wells (MW-3, MW-3A, and MW-6) and extraction wells for ammonia and nitrate at day 0, 4, 10, and 14 to evaluate the effectiveness of this technology in a natural system. After the pilot test is complete and depending on results, a Site-wide remediation plan would be developed and recommended.

#### *Advantages*

- Reduces the anticipated clean-up times required for MNA and other remedial options.
- Low cost to implement and continue with treatment.
- This remedial method can be implemented with minimal disturbance to Site operations. The anticipated number of days to complete this work is approximately 14 business days. Alta will coordinate Site activities to help minimize disturbance to the surrounding business.
- Requires no removal, treatment, or storage considerations for groundwater or soil.
- Based on Site-specific groundwater monitoring from 2014 to 2024, groundwater parameters including dissolved oxygen and oxidation reduction potential (ORP) resulted in low to moderate levels indicating an aerobic environment or oxidizing environment needed for bacteria growth and support.

#### *Disadvantages*

- May require a pilot test to determine infiltration rates.
- This is a novel approach to utilize existing proven wastewater technologies in a natural system and as such requires a pilot study.
- Complex heterogeneous systems involving aquifer materials, soils, and groundwater can introduce potential treatment inefficiencies due to imperfect reactive conditions.

### **3.7.2      *Clean-up Alternative 2 – Combination of Soil Excavation, Removal, and Monitored Natural Attenuation***

#### *Description*

The previously identified contaminated soils will be excavated, removed, and land-farmed, and the resultant pit(s) will be backfilled and compacted with clean soil. The groundwater extraction system will continue to operate and groundwater will be monitored to ensure that any remaining contamination is not migrating offsite and that the overall contaminant mass is reducing over time.

### *Advantages*

- Source of continued contamination at the Site will be removed.
- Could be done in conjunction with Site redevelopment activities to save costs.
- Leaves the groundwater extraction system in place and operational enhancing cleanup timeframe.
- Ongoing monitored natural attenuation (MNA) will provide information to aid in complete Site closure.
- Requires no removal, treatment, storage, or discharge considerations for groundwater.

### *Disadvantages*

- It may not be possible to remove all contaminated soil from the Site. Institutional controls, such as land use restrictions, may be required to ensure the protection of human health and the environment by limiting exposure to any remaining COCs and protecting the integrity of the remedy.
- Temporary disturbance to Site operations will be high.
- Shallow groundwater may limit the depth of excavation.
- Potential cost to haul and store soils at a landfarm.
- Potential cost to replace existing monitoring wells.

### **3.7.3      *Clean-up Alternative 3 – Combination of Soil Excavation, In-situ Biological Nitrification, and Monitoring Natural Attenuation***

#### *Description*

The previously identified contaminated soils will be excavated, removed, and land-farmed, and the resultant pit will have an Oxygen Release Compound (ORC) placed on the floor of the excavation and will be backfilled with clean soil. A biological nitrification product will be introduced into the injection wells to reduce ammonia and nitrate levels in Site groundwater. ORC and the nitrification product will be implemented to accelerate aerobic conditions via biodegradation. The groundwater extraction system will continue to operate and groundwater will be monitored to ensure that any remaining contamination is not migrating offsite and that the overall contaminant mass is reducing over time.

### *Advantages*

- Source of continued contamination at the Site will be removed.
- Could be done in conjunction with Site redevelopment activities to save costs.
- Leaves the groundwater extraction system in place and operational enhancing cleanup timeframe.
- Reduces the anticipated cleanup times required for MNA and other remedial options.
- Requires no removal, treatment, or storage considerations for groundwater.
- Adds two additional levels of treatment compared to Clean-up Alternative 1 alone.

### *Disadvantages*

- There are additional costs to continue site monitoring.
- It may not be possible to remove all contaminated soil from the Site. Institutional controls, such as land use restrictions may be required to ensure the protection of human health and the environment by limiting exposure to any remaining COCs and protecting the integrity of the remedy.
- Temporary disturbance to Site operations will be high.
- Shallow groundwater may limit the depth of excavation.
- Potential cost to haul and store PCS at landfarm.
- Potential cost to replace existing monitoring wells and groundwater extraction system.

### **3.7.4 Clean-up Alternative 4 – Phytoremediation**

#### *Description*

Phytoremediation is a means of removing, transforming, or binding contaminants in soil and groundwater through the use of plants, both as active and passive remediation tools. Plants can remediate contaminants through one or more of four processes:

- 1) phytotransformation,
- 2) phytoextraction,
- 3) phytostabilization, and
- 4) rhizofiltration.

Of these, phytotransformation is the process most active in plant removal of nitrogen compounds of interest. In addition to their ability to transform nitrogen compounds, some plants transpire great quantities of water. Thus, not only can plants remove certain types of contaminants, they can also act as groundwater extraction and flow control structures. Additionally, utilizing Site water for irrigation of these plants will accelerate remediation through plant groundwater uptake, but also through aeration and evaporation.

In addition, phytoremediation techniques generally meet with public acceptance due to the ease of understanding and a desire to see living things transform a contaminated site.

#### *Advantages*

- Low upfront cost but depending on cleanup timeframe, operation and maintenance (O&M) cost may be prohibitive.
- This cleanup method can be implemented with minimal disturbance to Site operations.
- This option requires no removal, treatment, storage, or discharge considerations for groundwater.
- Additional downtown greenspace for the community.

#### *Disadvantages*

- Depending on cleanup timeframe, O&M cost may be prohibitive.
- Time; Phytoremediation requires plantings to mature sufficiently to become effective at significant nitrogen removal. Sites that demand immediate action to protect drinking water supplies may not be able to wait for maturation of a planting.

- Depth of contamination may exceed the rooting depth of plants.
- Heavy, tight soils may limit rooting depth as well, even with species that are normally deep rooted, as can poorly drained soil conditions. Low permeability soils require high vacuum which may be costly.
- Some interactions among complex chemical, physical, and biological processes are not well understood, which may hinder the efficacy of this alternative.

### **3.7.5      *Clean-up Alternative 5 – No Action***

#### *Description*

The No-Action alternative assumes no remediation actions will be undertaken at the Site and must be considered as part of the comparative analysis process.

#### *Advantages*

- Cleanup costs of this alternative would be zero, although costs have already been incurred for Site investigations and monitoring.

#### *Disadvantages*

- This would require continued operation of the groundwater extraction system until such a time as the compliance well samples meet the compliance criteria specified in the Voluntary Remediation Work Plan per the Environmental Covenant.

**Figure 2. Potential Injection Map**

## **4 Detailed Analysis of Remediation Alternatives**

### **4.1 Description of Evaluation Criteria**

The remediation alternatives identified for the site (see Section 3) are evaluated in this section based on the following performance criteria:

1. Overall protection of human health and the environment
2. Ease of implementation
3. Cost of remediation
4. Sustainability – O&M and long-term effectiveness

The following subsections describing these performance criteria serve as a basis for conducting a comparative analysis of the proposed remedial alternatives.

#### **4.1.1 Overall Protection of Human Health and the Environment**

This criterion is used to evaluate whether human health and the environment are adequately protected. Human health protection includes reducing risk to acceptable levels, either by reducing contamination concentrations or eliminating potential routes for exposure by implementing specific training to meet regulatory requirements. Environmental protection includes minimizing or avoiding negative impacts to natural, cultural, and historical resources.

#### **4.1.2 Ease of Implementation**

Ease of implementation refers to the technical and administrative feasibility of carrying out an alternative and the availability of the required services and materials. The following factors are considered for each alternative:

- The likelihood of technical difficulties in constructing the alternative and delays due to technical problems.
- The potential for regulatory constraints to develop (e.g., as a result of uncovering buried cultural resources or encountering endangered species).
- The availability of necessary equipment, specialists, and provisions, as applicable.

#### **4.1.3 Cost**

This criterion considers the cost of implementing an alternative, including capital costs, O&M costs, opportunity costs, and monitoring costs.

#### **4.1.4 Sustainability – O&M and Long-term Effectiveness**

Sustainability includes an assessment for the potential need to replace the alternative's technical components in the long term. In addition, this criterion evaluates the ease of O&M procedures required for the Site.

### **4.2 Detailed Analyses of Alternatives**

All of the proposed alternatives have the potential to provide for overall protection of human health and the environment and will be designed to remain in compliance with applicable federal, state, and local regulations. **Since a No Action alternative results in following the Environmental Covenant, this alternative was not evaluated for the remediation alternatives.**

## **4.2.1        *Detailed Analysis of Alternative 1 – In-situ Biological Nitrification***

### **4.2.1.1        Overall Protection of Human Health and the Environment**

This alternative would accelerate the aerobic degradation of Site soil and groundwater contaminants.

### **4.2.1.2        Ease of Implementation**

Depending on the pilot study findings, the Site already has four injection wells in the area of remaining soil contamination that could be utilized to implement this alternative. Permits may be required for the injection of an in-situ biological nitrification agent into the site groundwater.

### **4.2.1.3        Cost**

The pilot study will drive the overall cost of this remediation alternative. Mobilization fees and laboratory fees would be incurred during groundwater monitoring events. The cost to implement the pilot study is between \$15,000 and \$20,000. Full scale injections could be as high as \$50,000 to \$60,000 along with groundwater monitoring costs estimated at \$15,000 to \$20,000 per year. Total cost for this alternative, with the pilot study and one year of quarterly monitoring, is estimated at \$80,000 to \$90,000.

### **4.2.1.4        Sustainability – O&M and Long-term Effectiveness**

Quarterly groundwater monitoring may be needed to determine the effectiveness of the in-situ biological nitrification agent and to ensure that human health is adequately protected. Quarterly monitoring will need to be conducted until COCs meet MCLs and Site-specific cleanup criteria. Depending on the effectiveness of the remedial approach in meeting cleanup goals, additional injections may be necessary. Institutional controls may be removed from the Site once it reaches compliance with regulations or institutional controls may even be eliminated.

## **4.2.2        *Detailed Analysis of Alternative 2 –Combination of Soil Excavation, Removal, and Monitored Natural Attenuation***

### **4.2.2.1        Overall Protection of Human Health and the Environment**

This alternative will remove the main source of Site contamination, as determined through Site testing and analysis. However, some contamination may remain at the Site and ongoing groundwater monitoring of natural attenuation processes will ensure that any remaining contamination does not migrate off-site and will provide data on the remaining amounts of contamination over time. Transportation of hazardous materials wastes also poses a potential, but negligible, short-term risk to human health and the environment.

### **4.2.2.2        Ease of Implementation**

The Site area demonstrating the highest contamination has been delineated to the extent possible. Nearby contractors are available to excavate this area using a backhoe and transport the soil to the closest landfarm. Monitoring wells can be re-installed in the event they need to be removed during source removal.

### **4.2.2.3        Cost**

Excavation and backfilling, landfarming, and monitoring well replacement costs are estimated at \$280,000 to \$310,000 for an area 80 by 70 feet, and 10 feet deep (2,000 cubic yards



estimated), and subsequent groundwater monitoring costs are estimated at \$15,000 to \$20,000 per year if conducted quarterly. Total cost for this alternative, with one year of quarterly monitoring, is estimated at \$295,000 to \$330,000.

#### **4.2.2.4 Sustainability – O&M and Long-term Effectiveness**

Since the contamination source will be removed, the period of time for natural attenuation may be shortened which may lead to a reduced monitoring time frame. Since contamination data is known, institutional controls may be removed from the Site once it reaches compliance with regulations.

### **4.2.3 Detailed Analysis of Alternative 3 – Combination of Soil Excavation, In-situ Biological Nitrification, and Monitoring Natural Attenuation**

#### **4.2.3.1 Overall Protection of Human Health and the Environment**

This alternative will remove the main source of Site contamination, as determined through Site testing and analysis. However, some contamination may remain at the Site and the introduction of an in-situ biological nitrification agent to the floor of the excavation and in the onsite injection wells will ensure accelerated aerobic biodegradation.

#### **4.2.3.2 Ease of Implementation**

The Site area demonstrating the highest contamination has been delineated to the extent possible. Nearby contractors are available to excavate this area and transport the soil to the closest landfarm. Monitoring wells can be re-installed in the event they need to be removed during source removal. Subsequent quarterly groundwater would be completed after removal activities.

#### **4.2.3.3 Cost**

Overall costs for this alternative will be higher since it combines the removal of the contamination source, the placement of in-situ biological nitrification agent, and ongoing monitoring to aid in Site closure. Excavation and backfilling, landfarming, and monitoring well replacement costs are estimated at \$280,000 to \$310,000 for an area 80 by 70 feet, and 10 feet deep (2,000 cubic yards estimated), in-situ biological nitrification agent has an estimated placement cost of \$1,500 to \$3,000, and groundwater monitoring costs are estimated at \$15,000 to \$20,000 per year. Total cost for this alternative, with one year of quarterly monitoring, is estimated at \$296,500 to \$333,000.

#### **4.2.3.4 Sustainability – O&M and Long-term Effectiveness**

Quarterly groundwater monitoring will also be needed to determine the effectiveness of the source removal and in-situ biological nitrification agent and to ensure that human health is adequately protected. Quarterly monitoring will need to be conducted until COCs meet MCLs and Site-specific cleanup criteria. Depending on the effectiveness of the remedial approach in meeting remediation goals, additional injections may be necessary. Institutional controls may be removed from the Site once it reaches compliance with regulations.

#### **4.2.4 Detailed Analysis of Alternative 4 – Phytoremediation**

##### **4.2.4.1 Overall Protection of Human Health and the Environment**

This alternative would enable plants at the surface to uptake nutrients. Since contaminated groundwater is present at depths greater than 10 feet bgs, this alternative would be ideal for shallow remediation but ineffective at treating contamination at depth unless Site water is utilized for irrigation.

##### **4.2.4.2 Ease of Implementation**

This alternative can be implemented with ease by simply planting vegetation at the surface and irrigating.

##### **4.2.4.3 Cost**

This alternative may be costly since the remediation would likely not be realized for many years. Overall costs are estimated at \$15,000 to \$20,000 to implement along with \$10,000 to \$15,000 per year in O&M and monitoring. Groundwater monitoring costs are estimated at \$15,000 to \$20,000 per year. Total cost for this alternative, with one year of quarterly monitoring, is estimated at \$40,000 to \$55,000.

##### **4.2.4.4 Sustainability – O&M and Long-term Effectiveness**

This alternative would be moderately effective for shallow soils. Once planted there would be minimal ongoing O&M efforts. Quarterly groundwater monitoring will be needed to determine the effectiveness of phytoremediation and to ensure that human health is adequately protected. Institutional controls may be removed from the Site once it reaches compliance with regulations.

## **5 Comparative Analysis of Remediation Alternatives**

### **5.1 Alternative Ranking Criteria**

Table 1 compares the analysis of the four proposed alternatives against the evaluation criteria. Alternatives with higher scores are considered better options for the owners. Rankings were made on a scale of “1” through “3” with:

- 1 = Low Success,
- 2 = Moderate or Average Success, and
- 3 = High Success.

**Table 1. Comparative Analysis of Remediation Alternatives**

Remediation Alternative	Overall Protection of Human Health and the Environment	Ease of Implementation	Cost-Effective Approach towards Remediation	Sustainability - O&M and Long-term Effectiveness	Total Score
1. <i>In-situ Biological Nitrification.</i>	2	3	2	2	9
2. <i>Combination of soil excavation/removal and MNA.</i>	3	2	1	2	8
3. <i>Combination of soil excavation/removal, in-situ biological nitrification, and MNA.</i>	3	2	1	3	9
4. <i>Phytoremediation.</i>	2	3	1	2	8
5. <i>No-Action.</i>	1	3	3	1	8

Notes: (1= Low Success, 2=Medium Success, 3=High Success)

(For Cost: 1=High Cost, 2=Medium Cost, 3=Low Cost)

## 5.2 Summary and Preferred Alternative

Alternatives 1 through 4 were similarly ranked yet they each score differently within the listed categories. Alternatives 1 and 3 have a higher overall long-term effectiveness but are much more costly and produce higher disturbance to location operations, while alternative 4 has lower long-term effectiveness. Alternatives 4 and 5 appear to be the least effective alternatives. Alternative 1, in-situ injection of a biological nitrification agent, is the most cost-effective alternative in combination with having a relatively high likelihood of success (depending on the pilot study) while maintaining limited disturbance to location operations. Though, if concentrations in groundwater do not decrease over a span of a year, additional injections may be necessary to promote attenuation.

Based on site and budgetary constraints, Alta recommends clean-up alternative 1, ***In-situ Biological Nitrification Treatment***, which includes one year of subsequent groundwater monitoring to determine level of effectiveness to meet remediation goals.

## 6 References

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**Attachment A**  
**Fact Sheets**