

**Rio del Norte Bosque Trail  
Improvement Project: 2015 Post-  
Construction Environmental  
Monitoring Report, Central Avenue to  
Interstate 40**

Prepared for

**City of Albuquerque, Open Space Division**

Prepared by

**SWCA Environmental Consultants**

January 2016



**RIO DEL NORTE BOSQUE TRAIL IMPROVEMENT PROJECT:  
2015 POST-CONSTRUCTION ENVIRONMENTAL  
MONITORING REPORT, CENTRAL AVENUE TO  
INTERSTATE 40**

Prepared for

**CITY OF ALBUQUERQUE  
OPEN SPACE DIVISION**

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SWCA Project No. 26561

January 2016

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**APPENDIX A**  
**REPEAT PHOTO POINT PHOTOGRAPHS FOR THE RIO DEL**  
**NORTE BOSQUE TRAIL SOIL AND VEGETATION**  
**MONITORING, 2015**

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**a. Plot 2 control, 2014, view south to north.**



**b. Plot 2 control, 2015, view south to north.**

**Figure A.1. Plot 2 control, view south to north; a. 2014, b. 2015. SWCA photographs, August 2014 and August 2015.**





**a. Plot 2 control, 2014, view north to south.**



**b. Plot 2 control, 2015, view north to south.**

**Figure A.2. Plot 2 control, view north to south; a. 2014, b. 2015. SWCA photographs, August 2014 and August 2015.**





**a. Plot 2 treatment, 2014, view south to north.**



**b. Plot 2 treatment, 2015, view south to north.**

**Figure A.3. Plot 2 treatment, view south to north; a. 2014, b. 2015. SWCA photographs, August 2014 and August 2015.**





**a. Plot 2 treatment, 2014, view north to south.**



**b. Plot 2 treatment, 2015, view north to south.**

**Figure A.4. Plot 2 treatment, view north to south; a. 2014, b. 2015. SWCA photographs, August 2014 and August 2015.**





**a. Plot 3 control, 2014, view south to north.**



**b. Plot 3 control, 2015, view south to north.**

**Figure A.5. Plot 3 control, view south to north; a. 2014, b. 2015. SWCA photographs, August 2014 and August 2015.**





**a. Plot 3 control, 2014, view north to south.**



**b. Plot 3 control, 2015, view north to south.**

**Figure A.6. Plot 3 control, view north to south; a. 2014, b. 2015. SWCA photographs, August 2014 and August 2015.**





**a. Plot 3 treatment, 2014, view south to north.**



**b. Plot 3 treatment, 2015, view south to north.**

**Figure A.7. Plot 3 treatment, view south to north; a. 2014, b. 2015. SWCA photographs, August 2014 and August 2015.**





**a. Plot 3 treatment, 2014, view north to south.**



**b. Plot 3 treatment, 2015, view north to south.**

**Figure A.8. Plot 3 treatment, view north to south; a. 2014, b. 2015. SWCA photographs, August 2014 and August 2015.**

CITY OF ALBUQUERQUE RIO DEL NORTE BOSQUE TRAIL

Photo Monitoring Restoration Effectiveness Analysis: 2-Photo Comparisons

Site:	2
Treatment Type (C, T):	C
Photo Point (e.g., N-S, S-N):	S-N
Photo 1 Date (mm/dd/yy):	08/26/14
Photo 2 Date (mm/dd/yy):	08/26/15

Change in Human-Caused Soil Surface Disturbance

Enter	+2	Considerable decrease in soil disturbance
Score:	+1	Some decrease in soil disturbance
0	0	No change in soil disturbance
	-1	Some increased soil disturbance
	-2	Considerable increase in soil disturbance

Comments:

Change in Herbaceous Vegetation Native vs. Exotic Species

Enter	+2	Considerable increase in proportion of native species
Score:	+1	Some increase in proportion of native species
0	0	No change in proportions of native vs. exotic species
	-1	Some increase in proportion of exotic species
	-2	Considerable increase in proportion of exotic species

Comments:

Change in Woody Vegetation Native vs. Exotic Species

Enter	+2	Considerable increase in proportion of native species
Score:	+1	Some increase in proportion of native species
0	0	No change in proportions of native vs. exotic species
	-1	Some increase in proportion of exotic species
	-2	Considerable increase in proportion of exotic species

Comments:

Change in Total Vegetation Foliage Cover

Enter	+2	Considerably greater cover
Score:	+1	Greater native vegetation cover and/or diversity
1	0	No change in native vegetation cover and/or diversity
	-1	Lower native vegetation cover and/or diversity
	-2	Considerably lower vegetation diversity

Comments: Slight increase in forb cover



Change in Total Vegetation Species Richness		
Enter	+2	Considerably more plant species richness
	+1	Greater plant species richness
Score: 0	0	No change in plant species richness
	-1	Reduced plant species richness
	-2	Considerably less plant species richness
Comments:		

Overall  
Score

1

General Site Comments (other environmental/land use factors):

#### CITY OF ALBUQUERQUE RIO DEL NORTE BOSQUE TRAIL

#### Photo Monitoring Restoration Effectiveness Analysis: 2-Photo Comparisons

Site:	2
Treatment Type (C, T):	C
Photo Point (e.g., N-S, S-N):	N-S
Photo 1 Date (mm/dd/yy):	08/26/14
Photo 2 Date (mm/dd/yy):	08/26/15

Change in Human-Caused Soil Surface Disturbance		
Enter	+2	Considerable decrease in soil disturbance
	+1	Some decrease in soil disturbance
Score: 0	0	No change in soil disturbance
	-1	Some increased soil disturbance
	-2	Considerable increase in soil disturbance
Comments:		

Change in Herbaceous Vegetation Native vs. Exotic Species		
Enter	+2	Considerable increase in proportion of native species
	+1	Some increase in proportion of native species
Score: 0	0	No change in proportions of native vs. exotic species
	-1	Some increase in proportion of exotic species
	-2	Considerable increase in proportion of exotic species
Comments:		

**Change in Woody Vegetation Native vs. Exotic Species**

Enter		+2	Considerable increase in proportion of native species
		+1	Some increase in proportion of native species
Score:	0	0	No change in proportions of native vs. exotic species
		-1	Some increase in proportion of exotic species
		-2	Considerable increase in proportion of exotic species

Comments:

**Change in Total Vegetation Foliage Cover**

Enter		+2	Considerably greater cover
		+1	Greater vegetation cover
Score:	-1	0	No change in vegetation cover
		-1	Less vegetation cover
		-2	Considerably less vegetation cover

Comments: Slight decrease in forb cover

**Change in Total Vegetation Species Richness**

Enter		+2	Considerably more plant species richness
		+1	Greater plant species richness
Score:	0	0	No change in plant species richness
		-1	Reduced plant species richness
		-2	Considerably less plant species richness

Comments:

Overall  
Score

-1

General Site Comments (other environmental/land use factors):

**CITY OF ALBUQUERQUE RIO DEL NORTE BOSQUE TRAIL**

**Photo Monitoring Restoration Effectiveness Analysis: 2-Photo Comparisons**

Site:	2
Treatment Type (C, T):	T
Photo Point (e.g., N-S, S-N):	S-N
Photo 1 Date (mm/dd/yy):	08/26/14
Photo 2 Date (mm/dd/yy):	08/26/15

**Change in Human-Caused Soil Surface Disturbance**

Enter		+2	Considerable decrease in soil disturbance
		+1	Some decrease in soil disturbance
Score:	-2	0	No change in soil disturbance
		-1	Some increased soil disturbance
		-2	Considerable increase in soil disturbance

Comments: Trail and planted New Mexico olive

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**Change in Herbaceous Vegetation Native vs. Exotic Species**

Enter		+2	Considerable increase in proportion of native species
		+1	Some increase in proportion of native species
Score:	0	0	No change in proportions of native vs. exotic species
		-1	Some increase in proportion of exotic species
		-2	Considerable increase in proportion of exotic species

Comments:

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**Change in Woody Vegetation Native vs. Exotic Species**

Enter		+2	Considerable increase in proportion of native species
		+1	Some increase in proportion of native species
Score:	0	0	No change in proportions of native vs. exotic species
		-1	Some increase in proportion of exotic species
		-2	Considerable increase in proportion of exotic species

Comments:

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**Change in Total Vegetation Foliage Cover**

Enter		+2	Considerably greater cover
		+1	Greater vegetation cover
Score:	-1	0	No change in vegetation cover
		-1	Less vegetation cover
		-2	Considerably less vegetation cover

Comments: Slight decrease in forb cover

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**Change in Total Vegetation Species Richness**

Enter		+2	Considerably more plant species richness
		+1	Greater plant species richness
Score:	0	0	No change in plant species richness
		-1	Reduced plant species richness
		-2	Considerably less plant species richness

Comments:

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Overall  
Score

-3

General Site Comments (other environmental/land use factors):

CITY OF ALBUQUERQUE RIO DEL NORTE BOSQUE TRAIL

Photo Monitoring Restoration Effectiveness Analysis: 2-Photo Comparisons

Site: 2  
Treatment Type (C, T): T  
Photo Point (e.g., N-S, S-N): N-S  
Photo 1 Date (mm/dd/yy): 08/26/14  
Photo 2 Date (mm/dd/yy): 08/26/15

Change in Human-Caused Soil Surface Disturbance

Enter  
Score: -2

+2	Considerable decrease in soil disturbance
+1	Some decrease in soil disturbance
0	No change in soil disturbance
-1	Some increased soil disturbance
-2	Considerable increase in soil disturbance

Comments: Trail widened

Change in Herbaceous Vegetation Native vs. Exotic Species

Enter  
Score: 0

+2	Considerable increase in proportion of native species
+1	Some increase in proportion of native species
0	No change in proportions of native vs. exotic species
-1	Some increase in proportion of exotic species
-2	Considerable increase in proportion of exotic species

Comments:

Change in Woody Vegetation Native vs. Exotic Species

Enter  
Score: 0

+2	Considerable increase in proportion of native species
+1	Some increase in proportion of native species
0	No change in proportions of native vs. exotic species
-1	Some increase in proportion of exotic species
-2	Considerable increase in proportion of exotic species

Comments:

Change in Total Vegetation Foliage Cover		
Enter	+2	Considerably greater cover
	+1	Greater vegetation cover
Score:	-1	0 No change in vegetation cover
	-1	Less vegetation cover
	-2	Considerably less vegetation cover

Comments: Slight decrease in forbs

Change in Total Vegetation Species Richness		
Enter	+2	Considerably more plant species richness
	+1	Greater plant species richness
Score:	0	0 No change in plant species richness
	-1	Reduced plant species richness
	-2	Considerably less plant species richness

Comments:

Overall  
Score

-3

General Site Comments (other environmental/land use factors):

#### CITY OF ALBUQUERQUE RIO DEL NORTE BOSQUE TRAIL

#### Photo Monitoring Restoration Effectiveness Analysis: 2-Photo Comparisons

Site:	3
Treatment Type (C, T):	C
Photo Point (e.g., N-S, S-N):	S-N
Photo 1 Date (mm/dd/yy):	08/26/14
Photo 2 Date (mm/dd/yy):	08/26/15

Change in Human-Caused Soil Surface Disturbance		
Enter	+2	Considerable decrease in soil disturbance
	+1	Some decrease in soil disturbance
Score:	0	0 No change in soil disturbance
	-1	Some increased soil disturbance
	-2	Considerable increase in soil disturbance

Comments:



**Change in Herbaceous Vegetation Native vs. Exotic Species**

Enter		+2	Considerable increase in proportion of native species
		+1	Some increase in proportion of native species
Score:	0	0	No change in proportions of native vs. exotic species
		-1	Some increase in proportion of exotic species
		-2	Considerable increase in proportion of exotic species

Comments:

**Change in Woody Vegetation Native vs. Exotic Species**

Enter		+2	Considerable increase in proportion of native species
		+1	Some increase in proportion of native species
Score:	2	0	No change in proportions of native vs. exotic species
		-1	Some increase in proportion of exotic species
		-2	Considerable increase in proportion of exotic species

Comments: Saltcedar removed

**Change in Total Vegetation Foliage Cover**

Enter		+2	Considerably greater cover
		+1	Greater vegetation cover
Score:	0	0	No change in vegetation cover
		-1	Less vegetation cover
		-2	Considerably less vegetation cover

Comments:

**Change in Total Vegetation Species Richness**

Enter		+2	Considerably more plant species richness
		+1	Greater plant species richness
Score:	0	0	No change in plant species richness
		-1	Reduced plant species richness
		-2	Considerably less plant species richness

Comments:

Overall  
Score

2

General Site Comments (other environmental/land use factors):

CITY OF ALBUQUERQUE RIO DEL NORTE BOSQUE TRAIL

Photo Monitoring Restoration Effectiveness Analysis: 2-Photo Comparisons

Site:	3
Treatment Type (C, T):	C
Photo Point (e.g., N-S, S-N):	N-S
Photo 1 Date (mm/dd/yy):	08/26/14
Photo 2 Date (mm/dd/yy):	08/26/15

Change in Human-Caused Soil Surface Disturbance

Enter	+2	Considerable decrease in soil disturbance
	+1	Some decrease in soil disturbance
Score: 0	0	No change in soil disturbance
	-1	Some increased soil disturbance
	-2	Considerable increase in soil disturbance

Comments:

Change in Herbaceous Vegetation Native vs. Exotic Species

Enter	+2	Considerable increase in proportion of native species
	+1	Some increase in proportion of native species
Score: 0	0	No change in proportions of native vs. exotic species
	-1	Some increase in proportion of exotic species
	-2	Considerable increase in proportion of exotic species

Comments:

Change in Woody Vegetation Native vs. Exotic Species

Enter	+2	Considerable increase in proportion of native species
	+1	Some increase in proportion of native species
Score: 0	0	No change in proportions of native vs. exotic species
	-1	Some increase in proportion of exotic species
	-2	Considerable increase in proportion of exotic species

Comments:

Change in Total Vegetation Foliage Cover

Enter	+2	Considerably greater cover
	+1	Greater vegetation cover
Score: 0	0	No change in vegetation cover
	-1	Less vegetation cover
	-2	Considerably less vegetation cover

Comments:

Change in Total Vegetation Species Richness		
Enter	+2	Considerably more plant species richness
	+1	Greater plant species richness
Score:	0	No change in plant species richness
	-1	Reduced plant species richness
	-2	Considerably less plant species richness
Comments:		

Overall  
Score

0

General Site Comments (other environmental/land use factors):

#### CITY OF ALBUQUERQUE RIO DEL NORTE BOSQUE TRAIL

#### Photo Monitoring Restoration Effectiveness Analysis: 2-Photo Comparisons

Site:	3
Treatment Type (C, T):	T
Photo Point (e.g., N-S, S-N):	S-N
Photo 1 Date (mm/dd/yy):	08/26/14
Photo 2 Date (mm/dd/yy):	08/26/15

Change in Human-Caused Soil Surface Disturbance		
Enter	+2	Considerable decrease in soil disturbance
	+1	Some decrease in soil disturbance
Score:	-2	No change in soil disturbance
	-1	Some increased soil disturbance
	-2	Considerable increase in soil disturbance
Comments: Trail widened		

Change in Herbaceous Vegetation Native vs. Exotic Species		
Enter	+2	Considerable increase in proportion of native species
	+1	Some increase in proportion of native species
Score:	0	No change in proportions of native vs. exotic species
	-1	Some increase in proportion of exotic species
	-2	Considerable increase in proportion of exotic species
Comments:		

**Change in Woody Vegetation Native vs. Exotic Species**

Enter	+2	Considerable increase in proportion of native species
	+1	Some increase in proportion of native species
Score: 2	0	No change in proportions of native vs. exotic species
	-1	Some increase in proportion of exotic species
	-2	Considerable increase in proportion of exotic species

Comments: Saltcedar removed

**Change in Total Vegetation Foliage Cover**

Enter	+2	Considerably greater cover
	+1	Greater vegetation cover
Score: 0	0	No change in vegetation cover
	-1	Less vegetation cover
	-2	Considerably less vegetation cover

Comments:

**Change in Total Vegetation Species Richness**

Enter	+2	Considerably more plant species richness
	+1	Greater plant species richness
Score: 0	0	No change in plant species richness
	-1	Reduced plant species richness
	-2	Considerably less plant species richness

Comments:

Overall  
Score

0

General Site Comments (other environmental/land use factors):

**CITY OF ALBUQUERQUE RIO DEL NORTE BOSQUE TRAIL**

**Photo Monitoring Restoration Effectiveness Analysis: 2-Photo Comparisons**

Site:	3
Treatment Type (C, T):	T
Photo Point (e.g., N-S, S-N):	N-S
Photo 1 Date (mm/dd/yy):	08/26/14
Photo 2 Date (mm/dd/yy):	08/26/15

**Change in Human-Caused Soil Surface Disturbance**

Enter		+2	Considerable decrease in soil disturbance
		+1	Some decrease in soil disturbance
Score:	-1	0	No change in soil disturbance
		-1	Some increased soil disturbance
		-2	Considerable increase in soil disturbance

Comments:

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**Change in Herbaceous Vegetation Native vs. Exotic Species**

Enter		+2	Considerable increase in proportion of native species
		+1	Some increase in proportion of native species
Score:	0	0	No change in proportions of native vs. exotic species
		-1	Some increase in proportion of exotic species
		-2	Considerable increase in proportion of exotic species

Comments:

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**Change in Woody Vegetation Native vs. Exotic Species**

Enter		+2	Considerable increase in proportion of native species
		+1	Some increase in proportion of native species
Score:	0	0	No change in proportions of native vs. exotic species
		-1	Some increase in proportion of exotic species
		-2	Considerable increase in proportion of exotic species

Comments:

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**Change in Total Vegetation Foliage Cover**

Enter		+2	Considerably greater cover
		+1	Greater vegetation cover
Score:	0	0	No change in vegetation cover
		-1	Less vegetation cover
		-2	Considerably less vegetation cover

Comments:

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**Change in Total Vegetation Species Richness**

Enter		+2	Considerably more plant species richness
		+1	Greater plant species richness
Score:	0	0	No change in plant species richness
		-1	Reduced plant species richness
		-2	Considerably less plant species richness

Comments:

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Overall  
Score

-1

General Site Comments (other environmental/land use factors):

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**City of Albuquerque Bosque Trail Restoration**

**Photo-Monitoring Restoration Effectiveness Analysis: Multi-Location-Photo Averages**

Site: 2C

Years:	2014 - 2015			
Photos:	S-N	N-S	other?	AVG.
Soil	0	0		0
Veg Native / Exotic Herbs	0	0		0
Veg Native / Exotic Woody	0	0		0
Veg Foliage Cover	1	-1		0
Plant Spp Richness	0	0		0
Sum Score	1	-1		0

Overall Average Score

Site: 2T

Years:	2014 - 2015			
Photos:	S-N	N-S	other?	AVG.
Soil	-2	-2		-2
Veg Native / Exotic Herbs	0	0		0
Veg Native / Exotic Woody	0	0		0
Veg Foliage Cover	-1	-1		-1
Plant Spp Richness	0	0		0
Sum Score	-3	-3		-3

Overall Average Score

Site: 3C

Years:	2014 - 2015			
Photos:	S-N	N-S	other?	AVG.
Soil	0	0		0
Veg Native / Exotic Herbs	0	0		0
Veg Native / Exotic Woody	2	0		1
Veg Foliage Cover	0	0		0
Plant Spp Richness	0	0		0
Sum Score	2	0		1

Overall Average Score

Site: 3T

Years:	2014 - 2015			
Photos:	S-N	N-S	other?	AVG.
Soil	-2	-1		-1.5
Veg Native / Exotic Herbs	0	0		0
Veg Native / Exotic Woody	2	0		1
Veg Foliage Cover	0	0		0
Plant Spp Richness	0	0		0
Sum Score	0	-1		-0.5

Overall Average Score

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**APPENDIX B**  
**PROPOSED ALTERNATIVE PLANS FOR PHASE III OF THE**  
**RIO DEL NORTE BOSQUE TRAIL IMPROVEMENT PROJECT:**  
**I-40 TO CAMPBELL ROAD, 2016**

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Existing Conditions / No Action





Alternative 1: Crusher Fine Path on Existing Path Alignment





Alternative 2A: Crusher Fine Path on Existing Path  
Alignment and Former Restoration Road





Alternative 2B: Crusher Fine Path on Existing Path  
Alignment and Former Restoration Road





Alternative 2C: Crusher Fine Path on Existing Path  
Alignment and Former Restoration Road





Alternative 2D: Crusher Fine Path on Existing Path  
Alignment and Former Restoration Road





Alternative 3: Crusher Fine Path on Existing Path and Former Restoration Road with Side Spurs to River

