

APPENDIX D

Construction Workers and Equipment for Action Alternatives

**Appendix D
Construction Workers and Equipment for Action Alternatives**

Activities/Engineered Feature	Construction Workers (#)				Construction Equipment
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	
Year 1					
Mobilization (Alt. 1–4)	5	5	5	5	20 ton Dump Truck (Multiple); Cat 120H Motor Grader; Cat D6 Dozer; Cat D9 Dozer; Cat TL642 Forklift; Cat 420E Backhoe Loader; Water Truck; 1 Ton Pickup Truck (2)
Re-contoured Existing Channel (Alt. 1, 3)	6	-	6	-	20 ton Dump Truck; Cat D6 Dozer; Cat D9 Dozer; Cat 330 Excavator; Cat 420E Backhoe Loader; Cat TL642 Forklift; Rain for Rent DV-300 5000 GPM Electric Pump (2); Aquadam Water-Filled Berm; 12” and 10” Dewatering hose/pipe; Water Truck; 1 Ton Pickup Truck (2)
Lowered Floodplain (Alt. 1–4)	5	5	6	6	Alt. 1–3: 20 ton Dump Truck; Cat D6 Dozer; Cat D9 Dozer; Cat 330 Excavator (2); Cat 420E Backhoe Loader; Water Truck; 1 Ton Pickup Truck (2) Alt. 4: same as Alt. 1–3, except 20 ton Dump Truck(3)
Inset Floodplain (Alt. 4)	-	-	-	8	20 ton Dump Truck(6); Cat D6 Dozer; Cat D9 Dozer(2); Cat 330 Excavator (2); Cat 420E Backhoe Loader; Aquadam Water-Filled Berm; Water Truck; 1 Ton Pickup Truck (2)
Existing Secondary Channel (Alt. 1–4)	3	3	3	3	Alt. 1 and 2: 21 ton Dump Truck; Cat D6 Dozer; Cat D9 Dozer; Cat 330 Excavator (2); Cat 420E Backhoe Loader; Water Truck; 1 Ton Pickup Truck (2) Alt. 3 and 4: 20 ton Dump Truck; Cat D6 Dozer; Cat D9 Dozer; Cat 330 Excavator; Cat 420E Backhoe Loader; Cat TL642 Forklift; Rain for Rent DV-300 5000 GPM Electric Pump (2); Aquadam Water-Filled Berm; 12” and 10” Dewatering hose/pipe; Water Truck; 1 Ton Pickup Truck (2)
New Channel (Alt. 1)	10	-	-	-	20 ton Dump Truck (Multiple); Cat D6 Dozer; Cat D9 Dozer; Cat 330 Excavator (3); Cat 420E Backhoe Loader; Cat TL642 Forklift; Rain for Rent DV-300 5000 GPM Electric Pump (2); Aquadam Water-Filled Berm; 12” and 10” Dewatering hose/pipe; Water Truck; 1 Ton Pickup Truck (2)
New Channel and River Mouth Modification (Alt. 2)	-	10	-	-	20 ton Dump Truck (Multiple); Cat D6 Dozer; Cat D9 Dozer; Cat 330 Excavator (3); Cat 420E Backhoe Loader; Cat TL642 Forklift; Rain for Rent DV-300 5000 GPM Electric Pump (2); Aquadam Water-Filled Berm; 12” and 10” Dewatering hose/pipe; Water Truck; 1 Ton Pickup Truck (2)

Appendix D Construction Workers and Equipment for Action Alternatives					
Activities/Engineered Feature	Construction Workers (#)				Construction Equipment
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	
New Channel and Vertical and Lateral Grade Controls (Alt. 3)	-	-	10	-	20 ton Dump Truck (Multiple); Cat D6 Dozer (2); Cat D9 Dozer (2); Cat 330 Excavator (3); Cat 420E Backhoe Loader; Cat TL642 Forklift; Rain for Rent DV-300 5000 GPM Electric Pump (2); Aquadam Water-Filled Berm; 12" and 10" Dewatering hose/pipe; Water Truck; 1 Ton Pickup Truck (2)
Revegetation/Irrigation (Alt. 1-4)	8	8	4	8	Cat D6 Dozer w/scarifier; Cat D9 Dozer; Cat 330 Excavator; Cat 420E Backhoe Loader; Cat TL642 Forklift; Truck Mounted Hydroseeder; Trailer Mounted Straw Mulcher; Bobcat Trencher; Water Truck; 1 Ton Pickup Truck (2)
Winterization (Alt. 1-4)	4	4	4	4	20 ton Dump Truck (Multiple); Cat D6 Dozer; Cat D9 Dozer; Cat TL642 Forklift; Cat 420E Backhoe Loader; Water Truck; 1 Ton Pickup Truck (2)
Year 2					
Mobilization (Alt. 1-4)	4	4	4	4	20 ton Dump Truck (Multiple); Cat 120H Motor Grader; Cat D6 Dozer; Cat D9 Dozer; Cat TL642 Forklift; Cat 420E Backhoe Loader; Water Truck; 1 Ton Pickup Truck (2)
New Channel and Lowered Floodplain (Alt. 1)	3	-	-	-	Cat TL642 Forklift; Cat 420E Backhoe Loader; Water Truck; 1 Ton Pickup Truck (2)
New Channel, River Mouth Modification, and Lowered Floodplain (Alt. 2)	-	3	-	-	Cat TL642 Forklift; Cat 420E Backhoe Loader; Water Truck; 1 Ton Pickup Truck (2)
New Channel, Recontoured Existing Channel, Existing Secondary Channel, and Lowered Floodplain (Alt. 3)	-	-	3	-	Cat TL642 Forklift; Cat 420E Backhoe Loader; Water Truck; 1 Ton Pickup Truck (2)
Existing Secondary Channel, Inset Floodplain and Lowered Floodplain (Alt. 4)	-	-	-	4	Cat TL642 Forklift; Cat 420E Backhoe Loader; Water Truck; 1 Ton Pickup Truck (2)
Bank Protection (Alt. 1-4)	7	7	7	7	20 ton Dump Truck; Cat D6 Dozer; Cat 330 Excavator (2); Cat 420E Backhoe Loader; Cat TL642 Forklift; Rain for Rent DV-300 5000 GPM Electric Pump (2); Aquadam Water-Filled Berm; 12" and 10" Dewatering hose/pipe; Water Truck; 1 Ton Pickup Truck (2)
Overflow culverts (Alt. 3)	-	-	5	-	Cat D6 Dozer; Cat 420E Backhoe Loader; Cat TL642 Forklift; Jack and Bore Drill Rig; Water Truck; 1 Ton Pickup Truck (2)

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Activities/Engineered Feature	Construction Workers (#)				Construction Equipment
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	
Vertical Grade Controls (Alt. 1)	6	-	-	-	20 ton Dump Truck; Cat D6 Dozer; Cat D9 Dozer; Cat 330 Excavator; Cat 420E Backhoe Loader; Cat TL642 Forklift; Rain for Rent DV-300 5000 GPM Electric Pump (2); Aquadam Water-Filled Berm; 12" and 10" Dewatering hose/pipe; Water Truck; 1 Ton Pickup Truck (2)
Vertical grade controls and River Mouth Modification (Alt. 3)	-	-	6	-	20 ton Dump Truck; Cat D6 Dozer; Cat D9 Dozer; Cat 330 Excavator; Cat 420E Backhoe Loader; Cat TL642 Forklift; Rain for Rent DV-300 5000 GPM Electric Pump (2); Aquadam Water-Filled Berm; 12" and 10" Dewatering hose/pipe; Water Truck; 1 Ton Pickup Truck (2)
Restored Floodplain (Alt. 4)	-	-	-	6	20 ton Dump Truck (Multiple); Cat D6 Dozer (3); Cat D9 Dozer (3); Cat 330 Excavator (3); Cat 420E Backhoe Loader; Cat TL642 Forklift; Aquadam Water-Filled Berm; Water Truck; 1 Ton Pickup Truck (2)
Recontoured Existing Channel (Alt. 4)	-	-	-	8	20 ton Dump Truck; Cat D6 Dozer; Cat D9 Dozer; Cat 330 Excavator; Cat 420E Backhoe Loader; Cat TL642 Forklift; Rain for Rent DV-300 5000 GPM Electric Pump (2); Aquadam Water-Filled Berm; 12" and 10" Dewatering hose/pipe; Water Truck; 1 Ton Pickup Truck (2)
Bulkhead and Levee (Alt. 1-3)	5	5	5	-	Barge Mounted Pile Driver; 20 ton Dump Truck (multiple); Cat D6 Dozer (2); Cat D9 Dozer; Cat 330 Excavator (2); Cat 825 Compactor; Cat 420E Backhoe Loader; Cat TL642 Forklift; Rain for Rent DV-300 5000 GPM Electric Pump (3); Aquadam Water-Filled Berm; 12" and 10" Dewatering hose/pipe; Water Truck; 1 Ton Pickup Truck (2)
Restored Lagoon (Alt. 1-3)	4	4	4	-	Cat D6 Dozer w/scarifier; Cat D9 Dozer; Cat 330 Excavator; Cat 420E Backhoe Loader; Cat TL642 Forklift; Rain for Rent DV-300 5000 GPM Electric Pump (2); Aquadam Water-Filled Berm; 12" and 10" Dewatering hose/pipe; Truck Mounted Hydroseeder; Trailer Mounted Straw Mulcher; Water Truck; 1 Ton Pickup Truck (2)
Revegetation/Irrigation (Alt. 1-4)	8	8	8	8	Cat D6 Dozer w/scarifier; Cat D9 Dozer; Cat 330 Excavator; Cat 420E Backhoe Loader; Cat TL642 Forklift; Truck Mounted Hydroseeder; Trailer Mounted Straw Mulcher; Bobcat Trencher; Water Truck; 1 Ton Pickup Truck (2)
Winterization (Alt. 1-4)	4	4	4	4	20 ton Dump Truck (Multiple); Cat D6 Dozer; Cat D9 Dozer; Cat TL642 Forklift; Cat 420E Backhoe Loader; Water Truck; 1 Ton Pickup Truck (2)

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Activities/Engineered Feature	Construction Workers (#)				Construction Equipment
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	
Year 3					
Mobilization (Alt. 1–4)	4	4	4	4	20 ton Dump Truck (Multiple); Cat 120H Motor Grader; Cat D6 Dozer; Cat D9 Dozer; Cat TL642 Forklift; Cat 420E Backhoe Loader; Water Truck; 1 Ton Pickup Truck (2)
New Channel, Re-contoured Existing Channel, and Lowered Floodplain (Alt. 1)	4	-	-	-	Cat TL642 Forklift; Cat 420E Backhoe Loader; Water Truck; 1 Ton Pickup Truck (2)
New Channel, River Mouth Modification, and Lowered Floodplain (Alt. 2)	-	4	-	-	Cat TL642 Forklift; Cat 420E Backhoe Loader; Water Truck; 1 Ton Pickup Truck (2)
Re-contoured Existing Channel, Existing Secondary Channel, and Lowered Floodplain (Alt. 3)	-	-	4	-	Cat TL642 Forklift; Cat 420E Backhoe Loader; Water Truck; 1 Ton Pickup Truck (2)
Existing Secondary Channel, Inset Floodplain, Lowered Floodplain, and Re-contoured Existing Channel (Alt. 4)	-	-	-	4	Cat TL642 Forklift; Cat 420E Backhoe Loader; Water Truck; 1 Ton Pickup Truck (2)
Excavation of Reserve Fill at Lower West Side and fill at TKPOA yard (Alt. 1, 2, and 3)	6	6	6	-	20 ton Dump Truck (Multiple); Cat D6 Dozer (3); Cat D9 Dozer (3); Cat 330 Excavator (3); Cat 420E Backhoe Loader; Cat TL642 Forklift; Aquadam Water-Filled Berm; Water Truck; 1 Ton Pickup Truck (2)
Public Access and Habitat Protection Features (Alt. 1, 2, and 4)	15	15	15	15	20 ton Dump Truck; Cat D6 Dozer (2); Cat D9 Dozer(2); Cat 330 Excavator (3); Cat 120H Motor Grader; Cat 825 Compactor; Cat BG-225 Asphalt Paver; Cat 420E Backhoe Loader; Cat TL642 Forklift; Water Truck; 1 Ton Pickup Truck (2)
Restored Lagoon (Alt. 1 and 2)	4	4	-	-	20 ton Dump Truck; Cat D6 Dozer; Cat D9 Dozer; Cat 330 Excavator; Cat 420E Backhoe Loader; Cat TL642 Forklift; Rain for Rent DV-300 5000 GPM Electric Pump (2); 12” and 10” Dewatering hose/pipe; Truck Mounted Hydroseeder; Trailer Mounted Straw Mulcher; Water Truck; 1 Ton Pickup Truck (2)
River Mouth Modification (Alt. 1)	5	-	-	-	20 ton Dump Truck; Cat D6 Dozer; Cat D9 Dozer; Cat 330 Excavator; Cat 420E Backhoe Loader; Cat TL642 Forklift; Rain for Rent DV-300 5000 GPM Electric Pump (2); Aquadam Water-Filled Berm; 12” and 10” Dewatering hose/pipe; Water Truck; 1 Ton Pickup Truck (2)

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Activities/Engineered Feature	Construction Workers (#)				Construction Equipment
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	
Restored Dunes (Alt. 1 and 2)	3	3	-	-	20 ton Dump Truck; Cat D6 Dozer; Cat D9 Dozer; Cat 330 Excavator; Cat 420E Backhoe Loader; Truck Mounted Hydroseeder; Trailer Mounted Straw Mulcher; Water Truck; 1 Ton Pickup Truck (2)
New Channel and Re-contoured Existing Channel (Alt. 1)	8	-	-	-	Cat D6 Dozer; Cat D9 Dozer; Cat 330 Excavator (2); Cat 420E Backhoe Loader; Cat TL642 Forklift; Rain for Rent DV-300 5000 GPM Electric Pump (3); Aquadam Water-Filled Berm; 12" and 10" Dewatering hose/pipe; Water Truck; 1 Ton Pickup Truck (2)
New Channel and River Mouth Modification (Alt. 2)	-	10	-	-	Cat D6 Dozer; Cat D9 Dozer; Cat 330 Excavator (2); Cat 420E Backhoe Loader; Cat TL642 Forklift; Rain for Rent DV-300 5000 GPM Electric Pump (3); Aquadam Water-Filled Berm; 12" and 10" Dewatering hose/pipe; Water Truck; 1 Ton Pickup Truck (2)
Vertical and Lateral Grade Controls (Alt. 1, 2, and 3)	6	6	6	-	20 ton Dump Truck; Cat D6 Dozer; Cat D9 Dozer; Cat 330 Excavator; Cat 420E Backhoe Loader; Cat TL642 Forklift; Rain for Rent DV-300 5000 GPM Electric Pump (2); Aquadam Water-Filled Berm; 12" and 10" Dewatering hose/pipe; Water Truck; 1 Ton Pickup Truck (2)
Partial Backfill and Complete Backfill Old Channel (Alt. 1, 2, and 3)	8	8	8	-	20 ton Dump Truck (Multiple); Cat D6 Dozer (2); Cat D9 Dozer (2); Cat 330 Excavator (2); Cat 420E Backhoe Loader; Cat TL642 Forklift; Cat 825 Compactor; Truck Mounted Hydroseeder; Trailer Mounted Straw Mulcher; Rain for Rent DV-300 5000 GPM Electric Pump (3); Aquadam Water-Filled Berm; 12" and 10" Dewatering hose/pipe; Water Truck; 1 Ton Pickup Truck (2)
Restored Lagoon (Alt. 1, 2, and 3)	3	3	3	-	20 ton Dump Truck; Cat D6 Dozer; Cat D9 Dozer; Cat 330 Excavator; Cat 420E Backhoe Loader; Cat TL642 Forklift; Rain for Rent DV-300 5000 GPM Electric Pump (2); Aquadam Water-Filled Berm; 12" and 10" Dewatering hose/pipe; Water Truck; 1 Ton Pickup Truck (2)
Restored Floodplain (Alt. 1, 2, and 3)	6	6	6	-	20 ton Dump Truck; Cat D6 Dozer; Cat D9 Dozer; Cat 330 Excavator; Cat 420E Backhoe Loader; Cat TL642 Forklift; Truck Mounted Hydroseeder; Trailer Mounted Straw Mulcher; Water Truck; 1 Ton Pickup Truck (2)
Stormwater Treatment Basins (Alt. 2 and 3)	-	4	4	-	20 ton Dump Truck; Cat D6 Dozer; Cat D9 Dozer; Cat 330 Excavator; Cat 420E Backhoe Loader; Water Truck; 1 Ton Pickup Truck (2)

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Activities/Engineered Feature	Construction Workers (#)				Construction Equipment
	Alt. 1	Alt. 2	Alt. 3	Alt. 4	
Revegetation/Irrigation (Alt. 1-4)	8	8	8	8	Cat D6 Dozer w/scarifier; Cat D9 Dozer; Cat 330 Excavator; Cat 420E Backhoe Loader; Cat TL642 Forklift; Truck Mounted Hydroseeder; Trailer Mounted Straw Mulcher; Bobcat Trencher; Water Truck; 1 Ton Pickup Truck (2)
Winterization (Alt. 1-4)	4	4	4	4	20 ton Dump Truck (Multiple); Cat D6 Dozer; Cat D9 Dozer; Cat TL642 Forklift; Cat 420E Backhoe Loader; Water Truck; 1 Ton Pickup Truck (2)
Year 4					
Mobilization (Alt. 1-4)	4	4	4	4	20 ton Dump Truck (Multiple); Cat 120H Motor Grader; Cat D6 Dozer; Cat D9 Dozer; Cat TL642 Forklift; Cat 420E Backhoe Loader; Water Truck; 1 Ton Pickup Truck (2)
Revegetation/Irrigation (Alt. 1-4)	4	4	4	4	Cat TL642 Forklift; Cat 420E Backhoe Loader; Bobcat Trencher; Water Truck; 1 Ton Pickup Truck (2)
Winterization and Project Shutdown (Alt. 1-4)	4	4	4	4	20 ton Dump Truck (Multiple); Cat D6 Dozer; Cat D9 Dozer; Cat TL642 Forklift; Cat 420E Backhoe Loader; Truck Mounted Hydroseeder; Trailer Mounted Straw Mulcher; Water Truck; 1 Ton Pickup Truck (2)

APPENDIX E

Alternative Cost Estimates

INITIAL COST ANALYSIS

In 2006, estimated costs for each Alternative were developed using standard cost estimating practices for civil engineering and environmental restoration projects. This information was created for the Concept Plan Report prepared for the project in 2006 and represents the alternatives at this stage in some instances features have been added or deleted and therefore do not represent the most current alternatives. The purpose of this section was simply to provide a relative representation of the costs of the various alternatives. A summary of the results are presented in the following table. Table 1 provides estimated costs based on estimated quantities and information available at that time. They were developed for planning purposes only and based on best available information.

In order to evaluate the four alternatives, general assumptions were made and applied similarly to each alternative. These included typical cross-sections of new channel, typical cross-sections of existing channel to be filled, spacing of habitat improvement features, construction access road width and length, etc. Unit costs were derived using a combination of actual costs from LWS and Trout Creek Restoration projects, cost publications like RSMMeans Site Work and Landscape Cost Data, data provided by resource agencies like Washington State Department of Fish and Wildlife and Alaska Department of Fish and Wildlife, and the design teams extensive knowledge of the site and professional experience. Design and permitting costs were included as 40% of construction.

Based on total cost, Alternative 3 is least expensive, followed by Alternative 2, 1, and 4. Total costs range from \$5.9M for Alternative 3 to \$19.7M for Alternative 4. This large range is due primarily to the differences in earthwork volumes and level of recreation infrastructure. If only site work, contractor costs, design and permitting costs are considered, since the three levels of recreation infrastructure, maximum, moderate and minimum, could be easily applied to any of the 4 alternatives, the only change in the resulting ranking is that Alternative 1 and 2 are switched.

Description		Alternative 1	Alternative 2	Alternative 3	Alternative 4
Recreation/Public Access					
	Visitor Center	\$900,000	\$0	\$100,000	\$100,000
	Boardwalk	\$500,000	\$0	\$287,500	\$262,500
	Public Access Trails	\$45,000	\$13,800	\$31,050	\$23,100
	Overlook/Viewing Platform	\$67,500	\$45,000	\$60,000	\$45,000
	Signage	\$31,500	\$21,000	\$28,000	\$21,000
	Decorative Fencing	\$600,000	\$200,000	\$400,000	\$400,000
	Subtotal	\$2,144,000	\$279,800	\$906,550	\$851,600
Site Work					
	Site Preparation/ Clearing	\$5,875	\$13,750	\$6,150	\$22,335
	Access Roads/Channel Crossings	\$150,900	\$186,000	\$94,500	\$9,000
	Channel Construction	\$1,200,220	\$1,615,075	\$155,540	\$10,067,540
	Channel Backfill (off-site borrow, in-basin)	\$0	\$644,125	\$285,000	\$0
	Channel Backfill (on-site borrow)	\$325,330	\$350,000	\$350,000	\$70,000
	Bank Stabilization/Protection	\$900,000	\$900,000	\$900,000	\$900,000
	Habitat Structures (200 ft spacing)	\$32,000	\$43,000	\$10,000	\$47,000
	Lateral Grade Controls	\$12,500	\$15,000	\$2,500	\$0
	Vertical Grade Controls	\$180,000	\$60,000	\$60,000	\$0
	Irrigation System	\$255,000	\$255,000	\$255,000	\$255,000
	Revegetation/Erosion Control	\$150,000	\$150,000	\$150,000	\$150,000
	Dewatering	\$250,000	\$250,000	\$250,000	\$250,000
	Bulkhead	\$250,000	\$250,000	\$250,000	\$0
	Construction Fencing	\$80,000	\$80,000	\$80,000	\$80,000
	Subtotal	\$3,791,825	\$4,811,950	\$2,848,690	\$11,850,875
Contractor Costs					
	Mobilization/Demobilization	\$379,183	\$481,195	\$284,869	\$1,185,088
	Surveying	\$10,000	\$10,000	\$10,000	\$10,000
	Road Repair	\$100,000	\$100,000	\$100,000	\$100,000
	Staging/Laydown	\$50,000	\$50,000	\$50,000	\$50,000
	Subtotal	\$539,183	\$641,195	\$444,869	\$1,345,088
Design and Permitting					
	Design (20%)	\$1,295,002	\$1,146,589	\$840,022	\$2,809,513
	Permitting (20%)	\$1,295,002	\$1,146,589	\$840,022	\$2,809,513
	Subtotal	\$2,590,003	\$2,293,178	\$1,680,044	\$5,619,025
	Total	\$9,065,011	\$8,026,123	\$5,880,153	\$19,666,588

APPENDIX F

Air Quality Modeling Results

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: H:\PROJECTS\Misc\Jason\Upper Truckee River\URBEMIS\UTR Construction Alternative 1.urb924

Project Name: Upper Truckee River - Alternative 1

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2015 TOTALS (lbs/day unmitigated)	4.57	33.31	25.28	0.00	85.30	1.79	87.09	17.82	1.64	19.46	4,599.35
2016 TOTALS (lbs/day unmitigated)	4.30	30.39	24.71	0.00	85.30	1.61	86.91	17.82	1.48	19.29	4,598.11
2017 TOTALS (lbs/day unmitigated)	8.41	60.32	46.54	0.01	93.81	3.03	96.85	19.60	2.79	22.39	10,746.37
2018 TOTALS (lbs/day unmitigated)	3.75	24.75	23.58	0.00	85.30	1.30	86.60	17.82	1.19	19.01	4,480.60

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
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Time Slice 5/1/2015-10/15/2015	<u>4.57</u>	<u>33.31</u>	<u>25.28</u>	<u>0.00</u>	<u>85.30</u>	<u>1.79</u>	<u>87.09</u>	<u>17.82</u>	<u>1.64</u>	<u>19.46</u>	<u>4,599.35</u>
Active Days: 120											
Mass Grading 05/01/2015-10/15/2015	4.57	33.31	25.28	0.00	85.30	1.79	87.09	17.82	1.64	19.46	4,599.35
Mass Grading Dust	0.00	0.00	0.00	0.00	85.28	0.00	85.28	17.81	0.00	17.81	0.00
Mass Grading Off Road Diesel	4.42	32.51	22.36	0.00	0.00	1.76	1.76	0.00	1.62	1.62	4,206.55
Mass Grading On Road Diesel	0.05	0.64	0.23	0.00	0.01	0.02	0.03	0.00	0.02	0.02	163.12
Mass Grading Worker Trips	0.10	0.16	2.69	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.68
Time Slice 5/2/2016-10/14/2016	<u>4.30</u>	<u>30.39</u>	<u>24.71</u>	<u>0.00</u>	<u>85.30</u>	<u>1.61</u>	<u>86.91</u>	<u>17.82</u>	<u>1.48</u>	<u>19.29</u>	<u>4,598.11</u>
Active Days: 120											
Mass Grading 05/01/2016-10/15/2016	4.30	30.39	24.71	0.00	85.30	1.61	86.91	17.82	1.48	19.29	4,598.11
Mass Grading Dust	0.00	0.00	0.00	0.00	85.28	0.00	85.28	17.81	0.00	17.81	0.00
Mass Grading Off Road Diesel	4.17	29.69	22.04	0.00	0.00	1.58	1.58	0.00	1.45	1.45	4,206.55
Mass Grading On Road Diesel	0.04	0.55	0.20	0.00	0.01	0.02	0.03	0.00	0.02	0.02	161.77
Mass Grading Worker Trips	0.09	0.15	2.47	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.78
Time Slice 5/1/2017-6/30/2017	<u>7.04</u>	<u>52.34</u>	<u>38.15</u>	<u>0.01</u>	<u>93.81</u>	<u>2.45</u>	<u>96.25</u>	<u>19.59</u>	<u>2.25</u>	<u>21.85</u>	<u>9,562.41</u>
Active Days: 45											
Building 05/01/2017-08/01/2017	2.90	23.68	13.59	0.00	0.00	0.95	0.95	0.00	0.87	0.87	4,615.79
Building Off Road Diesel	2.90	23.68	13.59	0.00	0.00	0.95	0.95	0.00	0.87	0.87	4,615.79
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading 05/01/2017-10/15/2017	4.15	28.66	24.56	0.01	93.81	1.50	95.31	19.59	1.38	20.97	4,946.62
Mass Grading Dust	0.00	0.00	0.00	0.00	93.78	0.00	93.78	19.58	0.00	19.58	0.00
Mass Grading Off Road Diesel	3.94	26.99	21.72	0.00	0.00	1.44	1.44	0.00	1.32	1.32	4,206.55
Mass Grading On Road Diesel	0.13	1.54	0.58	0.00	0.02	0.05	0.07	0.01	0.05	0.06	510.20
Mass Grading Worker Trips	0.08	0.14	2.26	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.87

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Time Slice 7/3/2017-8/1/2017 Active Days: 22	<u>8.41</u>	<u>60.32</u>	<u>46.54</u>	<u>0.01</u>	<u>93.81</u>	<u>3.03</u>	<u>96.85</u>	<u>19.60</u>	<u>2.79</u>	<u>22.39</u>	<u>10,746.37</u>
Asphalt 07/01/2017-08/01/2017	1.37	7.98	8.40	0.00	0.01	0.58	0.59	0.00	0.54	0.54	1,183.96
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.24	7.79	6.61	0.00	0.00	0.58	0.58	0.00	0.53	0.53	979.23
Paving On Road Diesel	0.01	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.95
Paving Worker Trips	0.06	0.11	1.76	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.79
Building 05/01/2017-08/01/2017	2.90	23.68	13.59	0.00	0.00	0.95	0.95	0.00	0.87	0.87	4,615.79
Building Off Road Diesel	2.90	23.68	13.59	0.00	0.00	0.95	0.95	0.00	0.87	0.87	4,615.79
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading 05/01/2017-10/15/2017	4.15	28.66	24.56	0.01	93.81	1.50	95.31	19.59	1.38	20.97	4,946.62
Mass Grading Dust	0.00	0.00	0.00	0.00	93.78	0.00	93.78	19.58	0.00	19.58	0.00
Mass Grading Off Road Diesel	3.94	26.99	21.72	0.00	0.00	1.44	1.44	0.00	1.32	1.32	4,206.55
Mass Grading On Road Diesel	0.13	1.54	0.58	0.00	0.02	0.05	0.07	0.01	0.05	0.06	510.20
Mass Grading Worker Trips	0.08	0.14	2.26	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.87
Time Slice 8/2/2017-10/13/2017 Active Days: 53	4.15	28.66	24.56	0.01	93.81	1.50	95.31	19.59	1.38	20.97	4,946.62
Mass Grading 05/01/2017-10/15/2017	4.15	28.66	24.56	0.01	93.81	1.50	95.31	19.59	1.38	20.97	4,946.62
Mass Grading Dust	0.00	0.00	0.00	0.00	93.78	0.00	93.78	19.58	0.00	19.58	0.00
Mass Grading Off Road Diesel	3.94	26.99	21.72	0.00	0.00	1.44	1.44	0.00	1.32	1.32	4,206.55
Mass Grading On Road Diesel	0.13	1.54	0.58	0.00	0.02	0.05	0.07	0.01	0.05	0.06	510.20
Mass Grading Worker Trips	0.08	0.14	2.26	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.87

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Time Slice 5/1/2018-10/15/2018	<u>3.75</u>	<u>24.75</u>	<u>23.58</u>	<u>0.00</u>	<u>85.30</u>	<u>1.30</u>	<u>86.60</u>	<u>17.82</u>	<u>1.19</u>	<u>19.01</u>	<u>4,480.60</u>
Active Days: 120											
Mass Grading 05/01/2018-10/15/2018	3.75	24.75	23.58	0.00	85.30	1.30	86.60	17.82	1.19	19.01	4,480.60
Mass Grading Dust	0.00	0.00	0.00	0.00	85.28	0.00	85.28	17.81	0.00	17.81	0.00
Mass Grading Off Road Diesel	3.67	24.50	21.47	0.00	0.00	1.29	1.29	0.00	1.19	1.19	4,206.55
Mass Grading On Road Diesel	0.01	0.12	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	44.08
Mass Grading Worker Trips	0.07	0.12	2.07	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.96

Phase Assumptions

Phase: Mass Grading 5/1/2015 - 10/15/2015 - Phase 1

Total Acres Disturbed: 20

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 258 cubic yards/day; Offsite Cut/Fill: 11 cubic yards/day

On Road Truck Travel (VMT): 40.52

Off-Road Equipment:

1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2016 - 10/15/2016 - Phase 2

Total Acres Disturbed: 20

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 258 cubic yards/day; Offsite Cut/Fill: 11 cubic yards/day

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On Road Truck Travel (VMT): 40.18

Off-Road Equipment:

- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2017 - 10/15/2017 - Phase 3

Total Acres Disturbed: 20

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 258 cubic yards/day; Offsite Cut/Fill: 30.3 cubic yards/day

On Road Truck Travel (VMT): 126.72

Off-Road Equipment:

- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2018 - 10/15/2018 - Phase 4

Total Acres Disturbed: 20

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 258 cubic yards/day; Offsite Cut/Fill: 11 cubic yards/day

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On Road Truck Travel (VMT): 10.95

Off-Road Equipment:

- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 7/1/2017 - 8/1/2017 - Phase 3 (Paving)

Acres to be Paved: 0.5

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 5/1/2017 - 8/1/2017 - Phase 3 (Construction)

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day
- 1 Generator Sets (549 hp) operating at a 0.74 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: H:\PROJECTS\Misc\Jason\Upper Truckee River\URBEMIS\UTR Construction Alternative 2.urb924

Project Name: Upper Truckee River - Alternative 2

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2015 TOTALS (lbs/day unmitigated)	4.74	35.56	26.08	0.01	146.09	1.87	147.96	30.51	1.72	32.23	5,174.83
2016 TOTALS (lbs/day unmitigated)	4.45	32.34	25.43	0.01	146.09	1.68	147.77	30.51	1.54	32.06	5,168.83
2017 TOTALS (lbs/day unmitigated)	7.12	53.32	38.52	0.01	146.09	2.48	148.58	30.52	2.29	32.80	9,889.35
2018 TOTALS (lbs/day unmitigated)	3.79	25.16	23.75	0.00	146.07	1.31	147.38	30.51	1.21	31.72	4,636.14

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
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Time Slice 5/1/2015-10/15/2015	<u>4.74</u>	<u>35.56</u>	<u>26.08</u>	<u>0.01</u>	<u>146.09</u>	<u>1.87</u>	<u>147.96</u>	<u>30.51</u>	<u>1.72</u>	<u>32.23</u>	<u>5,174.83</u>
Active Days: 120											
Mass Grading 05/01/2015-10/15/2015	4.74	35.56	26.08	0.01	146.09	1.87	147.96	30.51	1.72	32.23	5,174.83
Mass Grading Dust	0.00	0.00	0.00	0.00	146.05	0.00	146.05	30.50	0.00	30.50	0.00
Mass Grading Off Road Diesel	4.42	32.51	22.36	0.00	0.00	1.76	1.76	0.00	1.62	1.62	4,206.55
Mass Grading On Road Diesel	0.22	2.89	1.03	0.01	0.03	0.10	0.13	0.01	0.10	0.10	738.60
Mass Grading Worker Trips	0.10	0.16	2.69	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.68
Time Slice 5/2/2016-10/14/2016	<u>4.45</u>	<u>32.34</u>	<u>25.43</u>	<u>0.01</u>	<u>146.09</u>	<u>1.68</u>	<u>147.77</u>	<u>30.51</u>	<u>1.54</u>	<u>32.06</u>	<u>5,168.83</u>
Active Days: 120											
Mass Grading 05/01/2016-10/15/2016	4.45	32.34	25.43	0.01	146.09	1.68	147.77	30.51	1.54	32.06	5,168.83
Mass Grading Dust	0.00	0.00	0.00	0.00	146.05	0.00	146.05	30.50	0.00	30.50	0.00
Mass Grading Off Road Diesel	4.17	29.69	22.04	0.00	0.00	1.58	1.58	0.00	1.45	1.45	4,206.55
Mass Grading On Road Diesel	0.20	2.51	0.92	0.01	0.03	0.09	0.12	0.01	0.08	0.09	732.50
Mass Grading Worker Trips	0.09	0.15	2.47	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.78
Time Slice 5/1/2017-8/1/2017	<u>7.12</u>	<u>53.32</u>	<u>38.52</u>	<u>0.01</u>	<u>146.09</u>	<u>2.48</u>	<u>148.58</u>	<u>30.52</u>	<u>2.29</u>	<u>32.80</u>	<u>9,889.35</u>
Active Days: 67											
Building 05/01/2017-08/01/2017	2.90	23.68	13.59	0.00	0.00	0.95	0.95	0.00	0.87	0.87	4,615.79
Building Off Road Diesel	2.90	23.68	13.59	0.00	0.00	0.95	0.95	0.00	0.87	0.87	4,615.79
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading 05/01/2017-10/15/2017	4.23	29.65	24.93	0.01	146.09	1.54	147.63	30.52	1.41	31.93	5,273.57
Mass Grading Dust	0.00	0.00	0.00	0.00	146.05	0.00	146.05	30.50	0.00	30.50	0.00
Mass Grading Off Road Diesel	3.94	26.99	21.72	0.00	0.00	1.44	1.44	0.00	1.32	1.32	4,206.55
Mass Grading On Road Diesel	0.21	2.52	0.95	0.01	0.03	0.09	0.12	0.01	0.08	0.09	837.14
Mass Grading Worker Trips	0.08	0.14	2.26	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.87

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Time Slice 8/2/2017-10/13/2017	4.23	29.65	24.93	<u>0.01</u>	<u>146.09</u>	1.54	147.63	<u>30.52</u>	1.41	31.93	5,273.57
Active Days: 53											
Mass Grading 05/01/2017-10/15/2017	4.23	29.65	24.93	0.01	146.09	1.54	147.63	30.52	1.41	31.93	5,273.57
Mass Grading Dust	0.00	0.00	0.00	0.00	146.05	0.00	146.05	30.50	0.00	30.50	0.00
Mass Grading Off Road Diesel	3.94	26.99	21.72	0.00	0.00	1.44	1.44	0.00	1.32	1.32	4,206.55
Mass Grading On Road Diesel	0.21	2.52	0.95	0.01	0.03	0.09	0.12	0.01	0.08	0.09	837.14
Mass Grading Worker Trips	0.08	0.14	2.26	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.87
Time Slice 5/1/2018-10/15/2018	<u>3.79</u>	<u>25.16</u>	<u>23.75</u>	<u>0.00</u>	<u>146.07</u>	<u>1.31</u>	<u>147.38</u>	<u>30.51</u>	<u>1.21</u>	<u>31.72</u>	<u>4,636.14</u>
Active Days: 120											
Mass Grading 05/01/2018-10/15/2018	3.79	25.16	23.75	0.00	146.07	1.31	147.38	30.51	1.21	31.72	4,636.14
Mass Grading Dust	0.00	0.00	0.00	0.00	146.05	0.00	146.05	30.50	0.00	30.50	0.00
Mass Grading Off Road Diesel	3.67	24.50	21.47	0.00	0.00	1.29	1.29	0.00	1.19	1.19	4,206.55
Mass Grading On Road Diesel	0.05	0.53	0.21	0.00	0.01	0.02	0.03	0.00	0.02	0.02	199.62
Mass Grading Worker Trips	0.07	0.12	2.07	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.96

Phase Assumptions

Phase: Mass Grading 5/1/2015 - 10/15/2015 - Phase 1

Total Acres Disturbed: 31

Maximum Daily Acreage Disturbed: 7.75

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 396 cubic yards/day; Offsite Cut/Fill: 49.6 cubic yards/day

On Road Truck Travel (VMT): 183.46

Off-Road Equipment:

1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

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1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2016 - 10/15/2016 - Phase 2

Total Acres Disturbed: 31

Maximum Daily Acreage Disturbed: 7.75

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 396 cubic yards/day; Offsite Cut/Fill: 49.6 cubic yards/day

On Road Truck Travel (VMT): 181.94

Off-Road Equipment:

1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2017 - 10/15/2017 - Phase 3

Total Acres Disturbed: 31

Maximum Daily Acreage Disturbed: 7.75

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 396 cubic yards/day; Offsite Cut/Fill: 49.6 cubic yards/day

On Road Truck Travel (VMT): 207.93

Off-Road Equipment:

1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

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1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2018 - 10/15/2018 - Phase 4

Total Acres Disturbed: 31

Maximum Daily Acreage Disturbed: 7.75

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 396 cubic yards/day; Offsite Cut/Fill: 49.6 cubic yards/day

On Road Truck Travel (VMT): 49.58

Off-Road Equipment:

1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Building Construction 5/1/2017 - 8/1/2017 - Phase 3 (Construction)

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day

1 Generator Sets (549 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

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Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: H:\PROJECTS\Misc\Jason\Upper Truckee River\URBEMIS\UTR Construction Alternative 3.urb924

Project Name: Upper Truckee River - Alternative 3

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2015 TOTALS (lbs/day unmitigated)	4.59	33.50	25.35	0.00	95.06	1.79	96.85	19.85	1.65	21.50	4,647.26
2016 TOTALS (lbs/day unmitigated)	4.31	30.55	24.77	0.00	95.06	1.61	96.67	19.85	1.48	21.34	4,645.62
2017 TOTALS (lbs/day unmitigated)	8.36	59.71	46.32	0.01	96.92	3.01	99.93	20.25	2.77	23.02	10,545.68
2018 TOTALS (lbs/day unmitigated)	3.75	24.78	23.60	0.00	95.05	1.30	96.35	19.85	1.20	21.05	4,493.55

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
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Time Slice 5/1/2015-10/15/2015	<u>4.59</u>	<u>33.50</u>	<u>25.35</u>	<u>0.00</u>	<u>95.06</u>	<u>1.79</u>	<u>96.85</u>	<u>19.85</u>	<u>1.65</u>	<u>21.50</u>	<u>4,647.26</u>
Active Days: 120											
Mass Grading 05/01/2015-10/15/2015	4.59	33.50	25.35	0.00	95.06	1.79	96.85	19.85	1.65	21.50	4,647.26
Mass Grading Dust	0.00	0.00	0.00	0.00	95.04	0.00	95.04	19.85	0.00	19.85	0.00
Mass Grading Off Road Diesel	4.42	32.51	22.36	0.00	0.00	1.76	1.76	0.00	1.62	1.62	4,206.55
Mass Grading On Road Diesel	0.06	0.82	0.30	0.00	0.01	0.03	0.04	0.00	0.03	0.03	211.03
Mass Grading Worker Trips	0.10	0.16	2.69	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.68
Time Slice 5/2/2016-10/14/2016	<u>4.31</u>	<u>30.55</u>	<u>24.77</u>	<u>0.00</u>	<u>95.06</u>	<u>1.61</u>	<u>96.67</u>	<u>19.85</u>	<u>1.48</u>	<u>21.34</u>	<u>4,645.62</u>
Active Days: 120											
Mass Grading 05/01/2016-10/15/2016	4.31	30.55	24.77	0.00	95.06	1.61	96.67	19.85	1.48	21.34	4,645.62
Mass Grading Dust	0.00	0.00	0.00	0.00	95.04	0.00	95.04	19.85	0.00	19.85	0.00
Mass Grading Off Road Diesel	4.17	29.69	22.04	0.00	0.00	1.58	1.58	0.00	1.45	1.45	4,206.55
Mass Grading On Road Diesel	0.06	0.72	0.26	0.00	0.01	0.03	0.03	0.00	0.02	0.03	209.29
Mass Grading Worker Trips	0.09	0.15	2.47	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.78
Time Slice 5/1/2017-6/30/2017	<u>6.99</u>	<u>51.73</u>	<u>37.92</u>	<u>0.01</u>	<u>96.91</u>	<u>2.43</u>	<u>99.34</u>	<u>20.24</u>	<u>2.23</u>	<u>22.47</u>	<u>9,361.71</u>
Active Days: 45											
Building 05/01/2017-08/01/2017	2.90	23.68	13.59	0.00	0.00	0.95	0.95	0.00	0.87	0.87	4,615.79
Building Off Road Diesel	2.90	23.68	13.59	0.00	0.00	0.95	0.95	0.00	0.87	0.87	4,615.79
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading 05/01/2017-10/15/2017	4.10	28.06	24.33	0.01	96.91	1.48	98.39	20.24	1.36	21.60	4,745.93
Mass Grading Dust	0.00	0.00	0.00	0.00	96.89	0.00	96.89	20.23	0.00	20.23	0.00
Mass Grading Off Road Diesel	3.94	26.99	21.72	0.00	0.00	1.44	1.44	0.00	1.32	1.32	4,206.55
Mass Grading On Road Diesel	0.08	0.93	0.35	0.00	0.01	0.03	0.04	0.00	0.03	0.03	309.50
Mass Grading Worker Trips	0.08	0.14	2.26	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.87

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Time Slice 7/3/2017-8/1/2017 Active Days: 22	<u>8.36</u>	<u>59.71</u>	<u>46.32</u>	<u>0.01</u>	<u>96.92</u>	<u>3.01</u>	<u>99.93</u>	<u>20.25</u>	<u>2.77</u>	<u>23.02</u>	<u>10,545.68</u>
Asphalt 07/01/2017-08/01/2017	1.37	7.98	8.40	0.00	0.01	0.58	0.59	0.00	0.54	0.54	1,183.96
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.24	7.79	6.61	0.00	0.00	0.58	0.58	0.00	0.53	0.53	979.23
Paving On Road Diesel	0.01	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.95
Paving Worker Trips	0.06	0.11	1.76	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.79
Building 05/01/2017-08/01/2017	2.90	23.68	13.59	0.00	0.00	0.95	0.95	0.00	0.87	0.87	4,615.79
Building Off Road Diesel	2.90	23.68	13.59	0.00	0.00	0.95	0.95	0.00	0.87	0.87	4,615.79
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading 05/01/2017-10/15/2017	4.10	28.06	24.33	0.01	96.91	1.48	98.39	20.24	1.36	21.60	4,745.93
Mass Grading Dust	0.00	0.00	0.00	0.00	96.89	0.00	96.89	20.23	0.00	20.23	0.00
Mass Grading Off Road Diesel	3.94	26.99	21.72	0.00	0.00	1.44	1.44	0.00	1.32	1.32	4,206.55
Mass Grading On Road Diesel	0.08	0.93	0.35	0.00	0.01	0.03	0.04	0.00	0.03	0.03	309.50
Mass Grading Worker Trips	0.08	0.14	2.26	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.87
Time Slice 8/2/2017-10/13/2017 Active Days: 53	4.10	28.06	24.33	0.01	96.91	1.48	98.39	20.24	1.36	21.60	4,745.93
Mass Grading 05/01/2017-10/15/2017	4.10	28.06	24.33	0.01	96.91	1.48	98.39	20.24	1.36	21.60	4,745.93
Mass Grading Dust	0.00	0.00	0.00	0.00	96.89	0.00	96.89	20.23	0.00	20.23	0.00
Mass Grading Off Road Diesel	3.94	26.99	21.72	0.00	0.00	1.44	1.44	0.00	1.32	1.32	4,206.55
Mass Grading On Road Diesel	0.08	0.93	0.35	0.00	0.01	0.03	0.04	0.00	0.03	0.03	309.50
Mass Grading Worker Trips	0.08	0.14	2.26	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.87

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Time Slice 5/1/2018-10/15/2018	<u>3.75</u>	<u>24.78</u>	<u>23.60</u>	<u>0.00</u>	<u>95.05</u>	<u>1.30</u>	<u>96.35</u>	<u>19.85</u>	<u>1.20</u>	<u>21.05</u>	<u>4,493.55</u>
Active Days: 120											
Mass Grading 05/01/2018-10/15/2018	3.75	24.78	23.60	0.00	95.05	1.30	96.35	19.85	1.20	21.05	4,493.55
Mass Grading Dust	0.00	0.00	0.00	0.00	95.04	0.00	95.04	19.85	0.00	19.85	0.00
Mass Grading Off Road Diesel	3.67	24.50	21.47	0.00	0.00	1.29	1.29	0.00	1.19	1.19	4,206.55
Mass Grading On Road Diesel	0.01	0.15	0.06	0.00	0.00	0.01	0.01	0.00	0.00	0.01	57.04
Mass Grading Worker Trips	0.07	0.12	2.07	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.96

Phase Assumptions

Phase: Mass Grading 5/1/2015 - 10/15/2015 - Phase 1

Total Acres Disturbed: 24

Maximum Daily Acreage Disturbed: 6

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 244 cubic yards/day; Offsite Cut/Fill: 14.2 cubic yards/day

On Road Truck Travel (VMT): 52.42

Off-Road Equipment:

1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2016 - 10/15/2016 - Phase 2

Total Acres Disturbed: 24

Maximum Daily Acreage Disturbed: 6

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 244 cubic yards/day; Offsite Cut/Fill: 14.2 cubic yards/day

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On Road Truck Travel (VMT): 51.98

Off-Road Equipment:

- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2017 - 10/15/2017 - Phase 3

Total Acres Disturbed: 24

Maximum Daily Acreage Disturbed: 6

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 244 cubic yards/day; Offsite Cut/Fill: 18.4 cubic yards/day

On Road Truck Travel (VMT): 76.88

Off-Road Equipment:

- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2018 - 10/15/2018 - Phase 4

Total Acres Disturbed: 24

Maximum Daily Acreage Disturbed: 6

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 244 cubic yards/day; Offsite Cut/Fill: 14.2 cubic yards/day

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On Road Truck Travel (VMT): 14.17

Off-Road Equipment:

- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 7/1/2017 - 8/1/2017 - Phase 3 (Paving)

Acres to be Paved: 0.5

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 5/1/2017 - 8/1/2017 - Phase 3 (Construction)

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day
- 1 Generator Sets (549 hp) operating at a 0.74 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: H:\PROJECTS\Misc\Jason\Upper Truckee River\URBEMIS\UTR Construction Alternative 4.urb924

Project Name: Upper Truckee River - Alternative 4

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2015 TOTALS (lbs/day unmitigated)	4.82	36.63	26.47	0.01	382.27	1.91	384.17	79.84	1.75	81.59	5,448.45
2016 TOTALS (lbs/day unmitigated)	4.53	33.27	25.77	0.01	382.27	1.71	383.98	79.84	1.57	81.41	5,440.19
2017 TOTALS (lbs/day unmitigated)	8.53	61.85	47.12	0.01	383.73	3.09	386.82	80.15	2.84	82.99	11,254.11
2018 TOTALS (lbs/day unmitigated)	3.97	27.33	24.59	0.01	382.27	1.39	383.66	79.84	1.28	81.12	5,448.74

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
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Time Slice 5/1/2015-10/15/2015	<u>4.82</u>	<u>36.63</u>	<u>26.47</u>	<u>0.01</u>	<u>382.27</u>	<u>1.91</u>	<u>384.17</u>	<u>79.84</u>	<u>1.75</u>	<u>81.59</u>	<u>5,448.45</u>
Active Days: 120											
Mass Grading 05/01/2015-10/15/2015	4.82	36.63	26.47	0.01	382.27	1.91	384.17	79.84	1.75	81.59	5,448.45
Mass Grading Dust	0.00	0.00	0.00	0.00	382.22	0.00	382.22	79.82	0.00	79.82	0.00
Mass Grading Off Road Diesel	4.42	32.51	22.36	0.00	0.00	1.76	1.76	0.00	1.62	1.62	4,206.55
Mass Grading On Road Diesel	0.30	3.96	1.42	0.01	0.04	0.14	0.18	0.01	0.13	0.14	1,012.22
Mass Grading Worker Trips	0.10	0.16	2.69	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.68
Time Slice 5/2/2016-10/14/2016	<u>4.53</u>	<u>33.27</u>	<u>25.77</u>	<u>0.01</u>	<u>382.27</u>	<u>1.71</u>	<u>383.98</u>	<u>79.84</u>	<u>1.57</u>	<u>81.41</u>	<u>5,440.19</u>
Active Days: 120											
Mass Grading 05/01/2016-10/15/2016	4.53	33.27	25.77	0.01	382.27	1.71	383.98	79.84	1.57	81.41	5,440.19
Mass Grading Dust	0.00	0.00	0.00	0.00	382.22	0.00	382.22	79.82	0.00	79.82	0.00
Mass Grading Off Road Diesel	4.17	29.69	22.04	0.00	0.00	1.58	1.58	0.00	1.45	1.45	4,206.55
Mass Grading On Road Diesel	0.27	3.43	1.26	0.01	0.04	0.12	0.16	0.01	0.11	0.13	1,003.86
Mass Grading Worker Trips	0.09	0.15	2.47	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.78
Time Slice 5/1/2017-6/30/2017	<u>7.17</u>	<u>53.87</u>	<u>38.73</u>	<u>0.01</u>	<u>383.72</u>	<u>2.50</u>	<u>386.22</u>	<u>80.14</u>	<u>2.30</u>	<u>82.45</u>	<u>10,070.15</u>
Active Days: 45											
Building 05/01/2017-08/01/2017	2.90	23.68	13.59	0.00	0.00	0.95	0.95	0.00	0.87	0.87	4,615.79
Building Off Road Diesel	2.90	23.68	13.59	0.00	0.00	0.95	0.95	0.00	0.87	0.87	4,615.79
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading 05/01/2017-10/15/2017	4.27	30.19	25.14	0.01	383.72	1.56	385.27	80.14	1.43	81.57	5,454.36
Mass Grading Dust	0.00	0.00	0.00	0.00	383.67	0.00	383.67	80.13	0.00	80.13	0.00
Mass Grading Off Road Diesel	3.94	26.99	21.72	0.00	0.00	1.44	1.44	0.00	1.32	1.32	4,206.55
Mass Grading On Road Diesel	0.25	3.07	1.16	0.01	0.04	0.11	0.15	0.01	0.10	0.11	1,017.94
Mass Grading Worker Trips	0.08	0.14	2.26	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.87

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Time Slice 7/3/2017-8/1/2017 Active Days: 22	<u>8.53</u>	<u>61.85</u>	<u>47.12</u>	<u>0.01</u>	<u>383.73</u>	<u>3.09</u>	<u>386.82</u>	<u>80.15</u>	<u>2.84</u>	<u>82.99</u>	<u>11,254.11</u>
Asphalt 07/01/2017-08/01/2017	1.37	7.98	8.40	0.00	0.01	0.58	0.59	0.00	0.54	0.54	1,183.96
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.24	7.79	6.61	0.00	0.00	0.58	0.58	0.00	0.53	0.53	979.23
Paving On Road Diesel	0.01	0.08	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.95
Paving Worker Trips	0.06	0.11	1.76	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.79
Building 05/01/2017-08/01/2017	2.90	23.68	13.59	0.00	0.00	0.95	0.95	0.00	0.87	0.87	4,615.79
Building Off Road Diesel	2.90	23.68	13.59	0.00	0.00	0.95	0.95	0.00	0.87	0.87	4,615.79
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading 05/01/2017-10/15/2017	4.27	30.19	25.14	0.01	383.72	1.56	385.27	80.14	1.43	81.57	5,454.36
Mass Grading Dust	0.00	0.00	0.00	0.00	383.67	0.00	383.67	80.13	0.00	80.13	0.00
Mass Grading Off Road Diesel	3.94	26.99	21.72	0.00	0.00	1.44	1.44	0.00	1.32	1.32	4,206.55
Mass Grading On Road Diesel	0.25	3.07	1.16	0.01	0.04	0.11	0.15	0.01	0.10	0.11	1,017.94
Mass Grading Worker Trips	0.08	0.14	2.26	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.87
Time Slice 8/2/2017-10/13/2017 Active Days: 53	4.27	30.19	25.14	0.01	383.72	1.56	385.27	80.14	1.43	81.57	5,454.36
Mass Grading 05/01/2017-10/15/2017	4.27	30.19	25.14	0.01	383.72	1.56	385.27	80.14	1.43	81.57	5,454.36
Mass Grading Dust	0.00	0.00	0.00	0.00	383.67	0.00	383.67	80.13	0.00	80.13	0.00
Mass Grading Off Road Diesel	3.94	26.99	21.72	0.00	0.00	1.44	1.44	0.00	1.32	1.32	4,206.55
Mass Grading On Road Diesel	0.25	3.07	1.16	0.01	0.04	0.11	0.15	0.01	0.10	0.11	1,017.94
Mass Grading Worker Trips	0.08	0.14	2.26	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.87

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Time Slice 5/1/2018-10/15/2018	<u>3.97</u>	<u>27.33</u>	<u>24.59</u>	<u>0.01</u>	<u>382.27</u>	<u>1.39</u>	<u>383.66</u>	<u>79.84</u>	<u>1.28</u>	<u>81.12</u>	<u>5,448.74</u>
Active Days: 120											
Mass Grading 05/01/2018-10/15/2018	3.97	27.33	24.59	0.01	382.27	1.39	383.66	79.84	1.28	81.12	5,448.74
Mass Grading Dust	0.00	0.00	0.00	0.00	382.22	0.00	382.22	79.82	0.00	79.82	0.00
Mass Grading Off Road Diesel	3.67	24.50	21.47	0.00	0.00	1.29	1.29	0.00	1.19	1.19	4,206.55
Mass Grading On Road Diesel	0.23	2.71	1.05	0.01	0.04	0.10	0.13	0.01	0.09	0.10	1,012.22
Mass Grading Worker Trips	0.07	0.12	2.07	0.00	0.01	0.01	0.02	0.00	0.00	0.01	229.96

Phase Assumptions

Phase: Mass Grading 5/1/2015 - 10/15/2015 - Phase 1

Total Acres Disturbed: 21

Maximum Daily Acreage Disturbed: 5.25

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 614 cubic yards/day; Offsite Cut/Fill: 584.7 cubic yards/day

On Road Truck Travel (VMT): 251.42

Off-Road Equipment:

1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2016 - 10/15/2016 - Phase 2

Total Acres Disturbed: 21

Maximum Daily Acreage Disturbed: 5.25

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 614 cubic yards/day; Offsite Cut/Fill: 584.7 cubic yards/day

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On Road Truck Travel (VMT): 249.34

Off-Road Equipment:

1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2017 - 10/15/2017 - Phase 3

Total Acres Disturbed: 21

Maximum Daily Acreage Disturbed: 5.25

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 614 cubic yards/day; Offsite Cut/Fill: 588 cubic yards/day

On Road Truck Travel (VMT): 252.84

Off-Road Equipment:

1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2018 - 10/15/2018 - Phase 4

Total Acres Disturbed: 21

Maximum Daily Acreage Disturbed: 5.25

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 614 cubic yards/day; Offsite Cut/Fill: 584.7 cubic yards/day

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On Road Truck Travel (VMT): 251.42

Off-Road Equipment:

- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 7/1/2017 - 8/1/2017 - Phase 3 (Paving)

Acres to be Paved: 0.5

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 5/1/2017 - 8/1/2017 - Phase 3 (Construction)

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day
- 1 Generator Sets (549 hp) operating at a 0.74 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: H:\PROJECTS\Misc\Jason\Upper Truckee River\URBEMIS\UTR Construction Alternative 1.urb924

Project Name: Upper Truckee River - Alternative 1

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2015 TOTALS (tons/year unmitigated)	0.27	2.00	1.52	0.00	5.12	0.11	5.23	1.07	0.10	1.17	275.96
2016 TOTALS (tons/year unmitigated)	0.26	1.82	1.48	0.00	5.12	0.10	5.21	1.07	0.09	1.16	275.89
2017 TOTALS (tons/year unmitigated)	0.36	2.60	2.02	0.00	5.63	0.13	5.76	1.18	0.12	1.29	464.45
2018 TOTALS (tons/year unmitigated)	0.22	1.48	1.42	0.00	5.12	0.08	5.20	1.07	0.07	1.14	268.84

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
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2017	0.36	2.60	2.02	0.00	5.63	0.13	5.76	1.18	0.12	1.29	464.45
Building 05/01/2017-08/01/2017	0.10	0.79	0.46	0.00	0.00	0.03	0.03	0.00	0.03	0.03	154.63
Building Off Road Diesel	0.10	0.79	0.46	0.00	0.00	0.03	0.03	0.00	0.03	0.03	154.63
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading 05/01/2017-10/15/2017	0.25	1.72	1.47	0.00	5.63	0.09	5.72	1.18	0.08	1.26	296.80
Mass Grading Dust	0.00	0.00	0.00	0.00	5.63	0.00	5.63	1.18	0.00	1.18	0.00
Mass Grading Off Road Diesel	0.24	1.62	1.30	0.00	0.00	0.09	0.09	0.00	0.08	0.08	252.39
Mass Grading On Road Diesel	0.01	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	30.61
Mass Grading Worker Trips	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.79
Asphalt 07/01/2017-08/01/2017	0.02	0.09	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	13.02
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.09	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	10.77
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29
Paving Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.97
2018	0.22	1.48	1.42	0.00	5.12	0.08	5.20	1.07	0.07	1.14	268.84
Mass Grading 05/01/2018-10/15/2018	0.22	1.48	1.42	0.00	5.12	0.08	5.20	1.07	0.07	1.14	268.84
Mass Grading Dust	0.00	0.00	0.00	0.00	5.12	0.00	5.12	1.07	0.00	1.07	0.00
Mass Grading Off Road Diesel	0.22	1.47	1.29	0.00	0.00	0.08	0.08	0.00	0.07	0.07	252.39
Mass Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.65
Mass Grading Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.80

Phase Assumptions

Phase: Mass Grading 5/1/2015 - 10/15/2015 - Phase 1

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Total Acres Disturbed: 20

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 258 cubic yards/day; Offsite Cut/Fill: 11 cubic yards/day

On Road Truck Travel (VMT): 40.52

Off-Road Equipment:

- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2016 - 10/15/2016 - Phase 2

Total Acres Disturbed: 20

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 258 cubic yards/day; Offsite Cut/Fill: 11 cubic yards/day

On Road Truck Travel (VMT): 40.18

Off-Road Equipment:

- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2017 - 10/15/2017 - Phase 3

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Total Acres Disturbed: 20

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 258 cubic yards/day; Offsite Cut/Fill: 30.3 cubic yards/day

On Road Truck Travel (VMT): 126.72

Off-Road Equipment:

1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2018 - 10/15/2018 - Phase 4

Total Acres Disturbed: 20

Maximum Daily Acreage Disturbed: 5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 258 cubic yards/day; Offsite Cut/Fill: 11 cubic yards/day

On Road Truck Travel (VMT): 10.95

Off-Road Equipment:

1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 7/1/2017 - 8/1/2017 - Phase 3 (Paving)

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Acres to be Paved: 0.5

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 5/1/2017 - 8/1/2017 - Phase 3 (Construction)

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day
- 1 Generator Sets (549 hp) operating at a 0.74 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: H:\PROJECTS\Misc\Jason\Upper Truckee River\URBEMIS\UTR Construction Alternative 2.urb924

Project Name: Upper Truckee River - Alternative 2

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2015 TOTALS (tons/year unmitigated)	0.28	2.13	1.57	0.00	8.77	0.11	8.88	1.83	0.10	1.93	310.49
2016 TOTALS (tons/year unmitigated)	0.27	1.94	1.53	0.00	8.77	0.10	8.87	1.83	0.09	1.92	310.13
2017 TOTALS (tons/year unmitigated)	0.35	2.57	1.95	0.00	8.77	0.12	8.89	1.83	0.11	1.94	471.04
2018 TOTALS (tons/year unmitigated)	0.23	1.51	1.42	0.00	8.76	0.08	8.84	1.83	0.07	1.90	278.17

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
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2018	0.23	1.51	1.42	0.00	8.76	0.08	8.84	1.83	0.07	1.90	278.17
Mass Grading 05/01/2018-10/15/2018	0.23	1.51	1.42	0.00	8.76	0.08	8.84	1.83	0.07	1.90	278.17
Mass Grading Dust	0.00	0.00	0.00	0.00	8.76	0.00	8.76	1.83	0.00	1.83	0.00
Mass Grading Off Road Diesel	0.22	1.47	1.29	0.00	0.00	0.08	0.08	0.00	0.07	0.07	252.39
Mass Grading On Road Diesel	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.98
Mass Grading Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.80

Phase Assumptions

Phase: Mass Grading 5/1/2015 - 10/15/2015 - Phase 1

Total Acres Disturbed: 31

Maximum Daily Acreage Disturbed: 7.75

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 396 cubic yards/day; Offsite Cut/Fill: 49.6 cubic yards/day

On Road Truck Travel (VMT): 183.46

Off-Road Equipment:

1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2016 - 10/15/2016 - Phase 2

Total Acres Disturbed: 31

Maximum Daily Acreage Disturbed: 7.75

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 396 cubic yards/day; Offsite Cut/Fill: 49.6 cubic yards/day

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On Road Truck Travel (VMT): 181.94

Off-Road Equipment:

- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2017 - 10/15/2017 - Phase 3

Total Acres Disturbed: 31

Maximum Daily Acreage Disturbed: 7.75

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 396 cubic yards/day; Offsite Cut/Fill: 49.6 cubic yards/day

On Road Truck Travel (VMT): 207.93

Off-Road Equipment:

- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2018 - 10/15/2018 - Phase 4

Total Acres Disturbed: 31

Maximum Daily Acreage Disturbed: 7.75

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 396 cubic yards/day; Offsite Cut/Fill: 49.6 cubic yards/day

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On Road Truck Travel (VMT): 49.58

Off-Road Equipment:

- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Building Construction 5/1/2017 - 8/1/2017 - Phase 3 (Construction)

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day
- 1 Generator Sets (549 hp) operating at a 0.74 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

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Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: H:\PROJECTS\Misc\Jason\Upper Truckee River\URBEMIS\UTR Construction Alternative 3.urb924

Project Name: Upper Truckee River - Alternative 3

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2015 TOTALS (tons/year unmitigated)	0.28	2.01	1.52	0.00	5.70	0.11	5.81	1.19	0.10	1.29	278.84
2016 TOTALS (tons/year unmitigated)	0.26	1.83	1.49	0.00	5.70	0.10	5.80	1.19	0.09	1.28	278.74
2017 TOTALS (tons/year unmitigated)	0.36	2.56	2.01	0.00	5.81	0.13	5.94	1.21	0.12	1.33	452.41
2018 TOTALS (tons/year unmitigated)	0.23	1.49	1.42	0.00	5.70	0.08	5.78	1.19	0.07	1.26	269.61

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
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2017	0.36	2.56	2.01	0.00	5.81	0.13	5.94	1.21	0.12	1.33	452.41
Building 05/01/2017-08/01/2017	0.10	0.79	0.46	0.00	0.00	0.03	0.03	0.00	0.03	0.03	154.63
Building Off Road Diesel	0.10	0.79	0.46	0.00	0.00	0.03	0.03	0.00	0.03	0.03	154.63
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading 05/01/2017-10/15/2017	0.25	1.68	1.46	0.00	5.81	0.09	5.90	1.21	0.08	1.30	284.76
Mass Grading Dust	0.00	0.00	0.00	0.00	5.81	0.00	5.81	1.21	0.00	1.21	0.00
Mass Grading Off Road Diesel	0.24	1.62	1.30	0.00	0.00	0.09	0.09	0.00	0.08	0.08	252.39
Mass Grading On Road Diesel	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.57
Mass Grading Worker Trips	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.79
Asphalt 07/01/2017-08/01/2017	0.02	0.09	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	13.02
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.09	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	10.77
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29
Paving Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.97
2018	0.23	1.49	1.42	0.00	5.70	0.08	5.78	1.19	0.07	1.26	269.61
Mass Grading 05/01/2018-10/15/2018	0.23	1.49	1.42	0.00	5.70	0.08	5.78	1.19	0.07	1.26	269.61
Mass Grading Dust	0.00	0.00	0.00	0.00	5.70	0.00	5.70	1.19	0.00	1.19	0.00
Mass Grading Off Road Diesel	0.22	1.47	1.29	0.00	0.00	0.08	0.08	0.00	0.07	0.07	252.39
Mass Grading On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.42
Mass Grading Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.80

Phase Assumptions

Phase: Mass Grading 5/1/2015 - 10/15/2015 - Phase 1

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Total Acres Disturbed: 24

Maximum Daily Acreage Disturbed: 6

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 244 cubic yards/day; Offsite Cut/Fill: 14.2 cubic yards/day

On Road Truck Travel (VMT): 52.42

Off-Road Equipment:

- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2016 - 10/15/2016 - Phase 2

Total Acres Disturbed: 24

Maximum Daily Acreage Disturbed: 6

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 244 cubic yards/day; Offsite Cut/Fill: 14.2 cubic yards/day

On Road Truck Travel (VMT): 51.98

Off-Road Equipment:

- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2017 - 10/15/2017 - Phase 3

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Total Acres Disturbed: 24

Maximum Daily Acreage Disturbed: 6

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 244 cubic yards/day; Offsite Cut/Fill: 18.4 cubic yards/day

On Road Truck Travel (VMT): 76.88

Off-Road Equipment:

- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2018 - 10/15/2018 - Phase 4

Total Acres Disturbed: 24

Maximum Daily Acreage Disturbed: 6

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 244 cubic yards/day; Offsite Cut/Fill: 14.2 cubic yards/day

On Road Truck Travel (VMT): 14.17

Off-Road Equipment:

- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 7/1/2017 - 8/1/2017 - Phase 3 (Paving)

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Acres to be Paved: 0.5

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 5/1/2017 - 8/1/2017 - Phase 3 (Construction)

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day
- 1 Generator Sets (549 hp) operating at a 0.74 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: H:\PROJECTS\Misc\Jason\Upper Truckee River\URBEMIS\UTR Construction Alternative 4.urb924

Project Name: Upper Truckee River - Alternative 4

Project Location: Mountain Counties Air Basin

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
2015 TOTALS (tons/year unmitigated)	0.29	2.20	1.59	0.00	22.94	0.11	23.05	4.79	0.11	4.90	326.91
2016 TOTALS (tons/year unmitigated)	0.27	2.00	1.55	0.00	22.94	0.10	23.04	4.79	0.09	4.88	326.41
2017 TOTALS (tons/year unmitigated)	0.37	2.69	2.06	0.00	23.02	0.13	23.15	4.81	0.12	4.93	494.91
2018 TOTALS (tons/year unmitigated)	0.24	1.64	1.48	0.00	22.94	0.08	23.02	4.79	0.08	4.87	326.92

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

<u>ROG</u>	<u>NOx</u>	<u>CO</u>	<u>SO2</u>	<u>PM10 Dust</u>	<u>PM10 Exhaust</u>	<u>PM10</u>	<u>PM2.5 Dust</u>	<u>PM2.5 Exhaust</u>	<u>PM2.5</u>	<u>CO2</u>
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2017	0.37	2.69	2.06	0.00	23.02	0.13	23.15	4.81	0.12	4.93	494.91
Building 05/01/2017-08/01/2017	0.10	0.79	0.46	0.00	0.00	0.03	0.03	0.00	0.03	0.03	154.63
Building Off Road Diesel	0.10	0.79	0.46	0.00	0.00	0.03	0.03	0.00	0.03	0.03	154.63
Building Vendor Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mass Grading 05/01/2017-10/15/2017	0.26	1.81	1.51	0.00	23.02	0.09	23.12	4.81	0.09	4.89	327.26
Mass Grading Dust	0.00	0.00	0.00	0.00	23.02	0.00	23.02	4.81	0.00	4.81	0.00
Mass Grading Off Road Diesel	0.24	1.62	1.30	0.00	0.00	0.09	0.09	0.00	0.08	0.08	252.39
Mass Grading On Road Diesel	0.02	0.18	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	61.08
Mass Grading Worker Trips	0.00	0.01	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.79
Asphalt 07/01/2017-08/01/2017	0.02	0.09	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	13.02
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.01	0.09	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	10.77
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29
Paving Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.97
2018	0.24	1.64	1.48	0.00	22.94	0.08	23.02	4.79	0.08	4.87	326.92
Mass Grading 05/01/2018-10/15/2018	0.24	1.64	1.48	0.00	22.94	0.08	23.02	4.79	0.08	4.87	326.92
Mass Grading Dust	0.00	0.00	0.00	0.00	22.93	0.00	22.93	4.79	0.00	4.79	0.00
Mass Grading Off Road Diesel	0.22	1.47	1.29	0.00	0.00	0.08	0.08	0.00	0.07	0.07	252.39
Mass Grading On Road Diesel	0.01	0.16	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	60.73
Mass Grading Worker Trips	0.00	0.01	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.80

Phase Assumptions

Phase: Mass Grading 5/1/2015 - 10/15/2015 - Phase 1

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Total Acres Disturbed: 21

Maximum Daily Acreage Disturbed: 5.25

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 614 cubic yards/day; Offsite Cut/Fill: 584.7 cubic yards/day

On Road Truck Travel (VMT): 251.42

Off-Road Equipment:

- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2016 - 10/15/2016 - Phase 2

Total Acres Disturbed: 21

Maximum Daily Acreage Disturbed: 5.25

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 614 cubic yards/day; Offsite Cut/Fill: 584.7 cubic yards/day

On Road Truck Travel (VMT): 249.34

Off-Road Equipment:

- 1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day
- 2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day
- 2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day
- 1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day
- 1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day
- 1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2017 - 10/15/2017 - Phase 3

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Total Acres Disturbed: 21

Maximum Daily Acreage Disturbed: 5.25

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 614 cubic yards/day; Offsite Cut/Fill: 588 cubic yards/day

On Road Truck Travel (VMT): 252.84

Off-Road Equipment:

1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 5/1/2018 - 10/15/2018 - Phase 4

Total Acres Disturbed: 21

Maximum Daily Acreage Disturbed: 5.25

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 614 cubic yards/day; Offsite Cut/Fill: 584.7 cubic yards/day

On Road Truck Travel (VMT): 251.42

Off-Road Equipment:

1 Dumpers/Tenders (16 hp) operating at a 0.38 load factor for 8 hours per day

2 Excavators (168 hp) operating at a 0.57 load factor for 8 hours per day

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Trenchers (63 hp) operating at a 0.75 load factor for 8 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 7/1/2017 - 8/1/2017 - Phase 3 (Paving)

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Acres to be Paved: 0.5

Off-Road Equipment:

- 4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day
- 1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day
- 1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 5/1/2017 - 8/1/2017 - Phase 3 (Construction)

Off-Road Equipment:

- 1 Cranes (399 hp) operating at a 0.43 load factor for 8 hours per day
- 2 Forklifts (145 hp) operating at a 0.3 load factor for 8 hours per day
- 1 Generator Sets (549 hp) operating at a 0.74 load factor for 8 hours per day
- 1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day
- 3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day