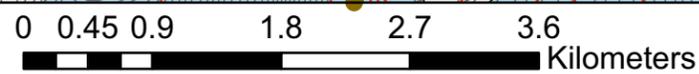
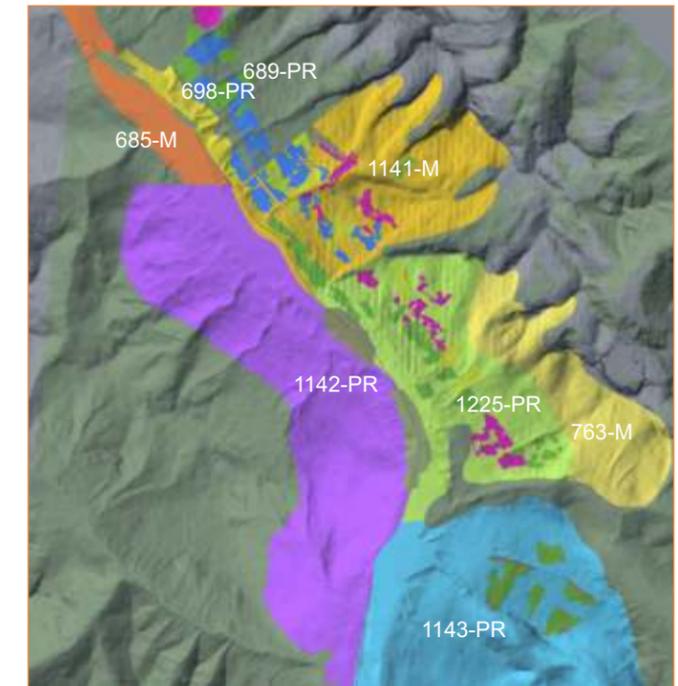


→ Visual Force Convexity
→ Visual Force Concavity



BCTS Clemina Visual Impact Assessment

Clemina 2021 VIA



Legend

- Clemina2021VPs
- Clemina_Highway5
- July_29,_2021_Clemina_Existing_Roads
- E2000-2003t
- E2010-2015_Clemina
- E2015-2020_Clemina
- CM961redo
- Clemina_A91882_Block_Shapefile
- August_3,_2021_Clemina_Proposed_Blocks
- P-line
- RDI_trim_transportation2



RDI Resource Design Inc
 August 22, 2021
 Edit update August 24, 2021

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Clemina Visual Impact Assessment 2021

Proposed Cutblocks CMABA, CM7RG, CM961, AL7P9, CM2020-01, CM2020-02, CM2020-03, CM2020-04

On August 3, 2021, Ches Clem, RPF, Planning Forester, Clearwater Field Team, BC Timber Sales Kamloops Business Area, requested that RDI proceed with a VIA project for BCTS Clearwater's Clemina Operating Area, mentioning that RDI completed a VIA on this area in 2014 called "Clemina North-east Group". The new project is covered under contract PD18TEB007. A data link was provided which included the proposed 8 cutblocks, existing alteration, and proposed roads.

The project area is located along the east side of Highway 5 within BCGS Mapsheets 083d055 and 083d065. Viewpoints are also within the same mapsheets. Based on earlier work by RDI, Ches Clem selected 4 viewpoints for photography taken on June 27, 2021. RDI named the photo locations CC1 through CC4. RDI searched for and located an additional viewpoint to view the project area from the north, 780m northwest of CC4 along the highway. The 5 viewpoints, covering 11.7km of highway travel, were entered into ArcMap and the VNS projects as decimal degrees (see Table 1, opposite).

The nature of the terrain relative to the cutblock locations restricted easy visibility to 4 of the 5 viewpoints - CC1 and CC2 in the south end, both looking north, and CC4 and CC5 at the north end looking south as identified by RDI. The south and north viewpoints look separately at specific Visually Sensitive Units (VSUs) and cutblock groupings within them, as follows:

VSU 1225 (Partial Retention VQO) - Group 1: CMABA, CM7RG, CM961
VSU 1141 (Modification VQO) - Group 2: AL7P9, CM2020-01, CM2020-02, CM2020-03, CM2020-04

RDI subdivided VSU 1225 into 3 subunits (landforms) in the 2014 report. The same divisions were adhered to in this report, with the southern cutblocks falling within VSU 1225C as indicated on the key map (page 1). The relevant VSUs were also coloured distinctly in the Visual Nature Studio planimetric portrayal (see inset, page 1). This colour coding was also useful for tracking the VSUs in perspective view from each viewpoint (see insets, each viewpoint sheet, pages 4, 6, 8, 9 & 10).

The existing Clemina landscape contains a high diversity of previously harvested and regenerating openings. The challenge to RDI was to fairly represent and track each age group revealed in the "existing openings" shapefile provided by Ches Clem. Most of openings in the file were already duly indicated in the forest cover VRI shapefile obtained by RDI and used to populate the VNS simulations based on the Stand_Ht attribute. RDI over-rode the forest cover for 3 harvest date groupings as provided in the "recent" file. These were 2000-2003 considered to exhibit Visually Effective Green-up (VEG); 2010-2014 - most likely non-VEG; and 2015-2020 considered nonVEG. The 2015-2020 group included the 2017 harvesting of cutblock CM7U7. Each of these groups are colour-coded on the key map (page 1) within individual harvest year indicated for each opening for easy reference. The 2000-2003 harvest year group was necessarily narrow as there were no openings in the years 2004 to 2009. The 2021 cutblocks are shown in bright yellow for distinction and ease of tracking in the perspective view simulations from each viewpoint.

Findings

Table 2 provides a summary of cutblock visibility by viewpoint. All but two cutblocks were considered to have visibility or potential visibility. Three cutblocks are coded with V*, meaning that they are likely to be highly visible (CMABA from CC1, CM7RG from CC1 and CC2, and CM2020-02 from CC5 (the viewpoint discovered by RDI)). The two non-Visually Sensitive (NVS) cutblocks are CM2020-03 and CM2020-04. Each cutblock was tracked in the simulations from each viewpoint, and labelled if they appeared in the simulations as shown on each viewpoint sheet. Percent alteration was calculated from three viewpoints - CC1, CC2, and CC5. The findings are presented on each viewpoint percent alteration sheet, and are summarized in Table 3 (opposite).

CC1 - Percent alteration was calculated for what was seen in the viewpoint photography, and was slightly widened to include CM961 as shown in the visual simulation. Travelling along the highway from CC1 to CC2, CM961 is more openly revealed, but remains small in scale. Regardless of methodology, CC1 exceeds the limit for Partial Retention of 7% by about 3% for VSU 1225C when the existing 2015 to 2020 openings are included. Page 5 provides the detailed chart of percent alteration, showing both CMABA (2.87%) and CM7RG (4.60%), or 7.47%. Together, the two cutblocks exceed the VQO limit, without inclusion of the nonVEG (2.66%). The two cutblocks are in focal position on the landform when travelling north on Highway 5. Additionally, CM7RG exhibits square corners not in keeping with Partial Retention visual quality class descriptors or visual forces. CC2 percent alteration drops to 3.80% for new and existing, with CM7RG still highly visible but of better shape, while CMABA is partially screened.

From the north, AL7P9, and CM2020-02 are seen from CC4, and CM2020-01 comes into view from CC5, in addition to those seen from CC4. Only 2020-02 is highly visible from CC5 while percent alteration is well within Modification VQC limits of 18% at 8.85% for VSU 1141. Although focal, CM2020-02 as seen from CC5 exhibits good design and conformity with visual forces.

Conclusion and Recommendations

The diverse landscape is tolerant of harvesting which fits current patterns (high VAC). CM7RG and less so CMABA push the percent alteration and design criteria over the limit for Partial Retention in VSU1225C. Deferral of CM7RG or drastic reduction in both CM7RG and CMABA will be necessary to meet the VQO.



KB Fairhurst, PhD, RPF

Clemina 2021 Viewpoints

	Longitude	Latitude
CC1	-119.09817	52.57528
CC2	-119.17017	52.64694
CC3	-119.09639	52.58675
CC4	-119.18333	52.65369
CC5	-119.19296	52.65728

Table 1

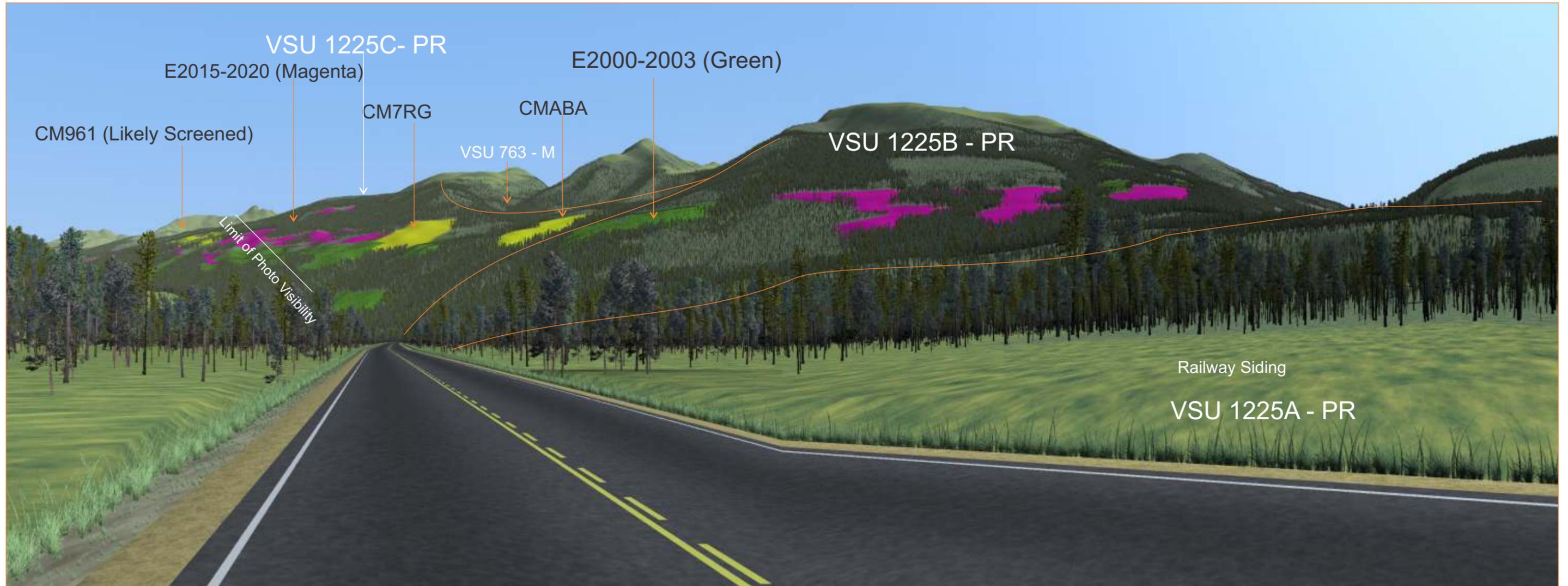
Clemina 2021 Cutblock Visibility					
	Viewpoint				
Cutblock	CC1	CC2	CC3	CC4	CC5
CMABA	V*	V			
CM7RG	V*	V*			
CM961	V (POT)	V (POT)			V (POT)
AL7P9				V	V
CM2020-01					V
CM2020-03					
CM2020-02				V	V*
CM2020-04					

"POT" = Potential
V* - HIGHLY VISIBLE

Table 2

Total Percent Alteration, by Viewpoint					
Viewpoint	Proposed	E2015-2020	E2010-2014	Sum Alt 1225-PR	Sum Alt VSU 1141-M
CC1-Photo Limit	7.46%	2.88%		10.34%	
CC1-Simulation Limit	7.20%	3.86%		11.06%	
CC2	2.54%	1.26%		3.80%	
CC5	4.80%	1.18%	2.86%		8.85%

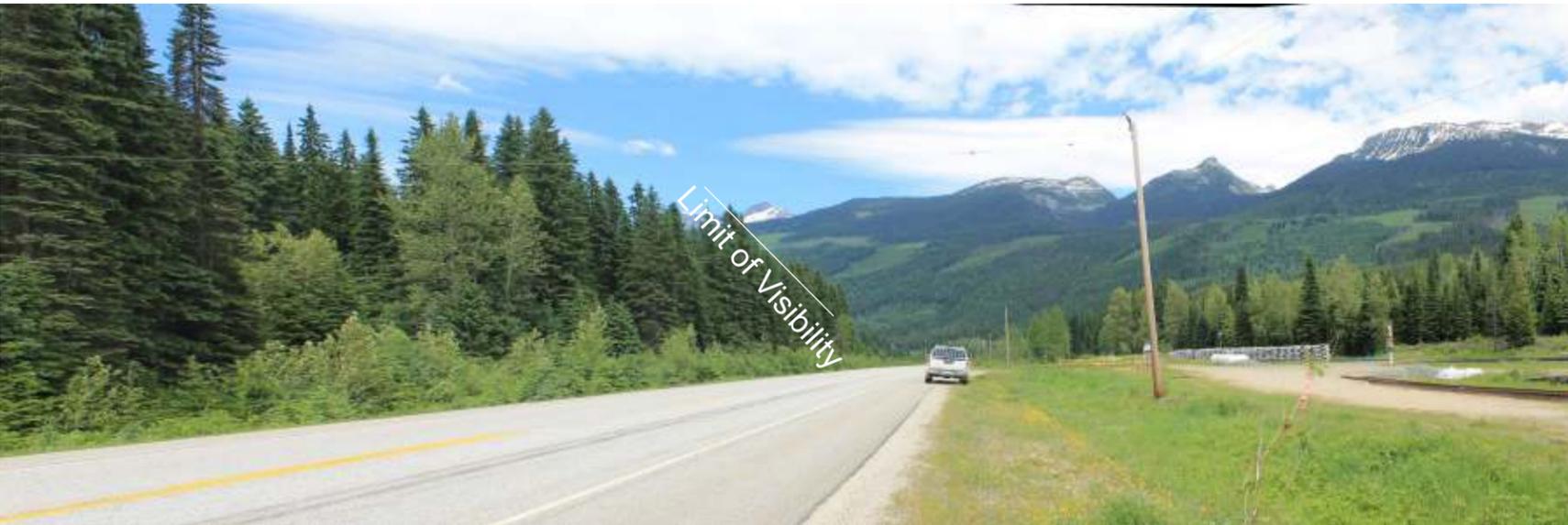
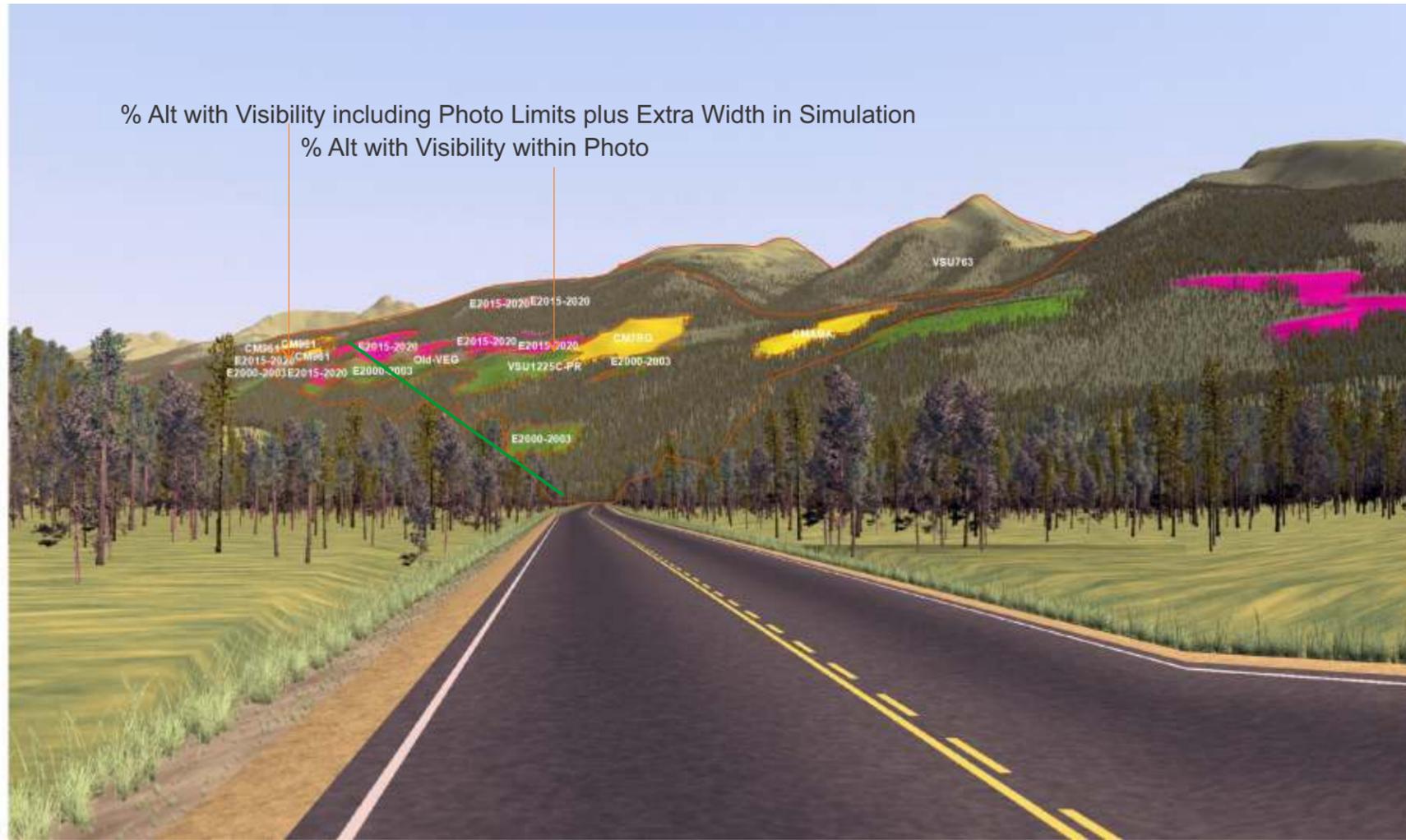
Table 3



CC1-9733-9739-June 22, 2021

Photo by Ches Clem 2021; Panorama by RDI

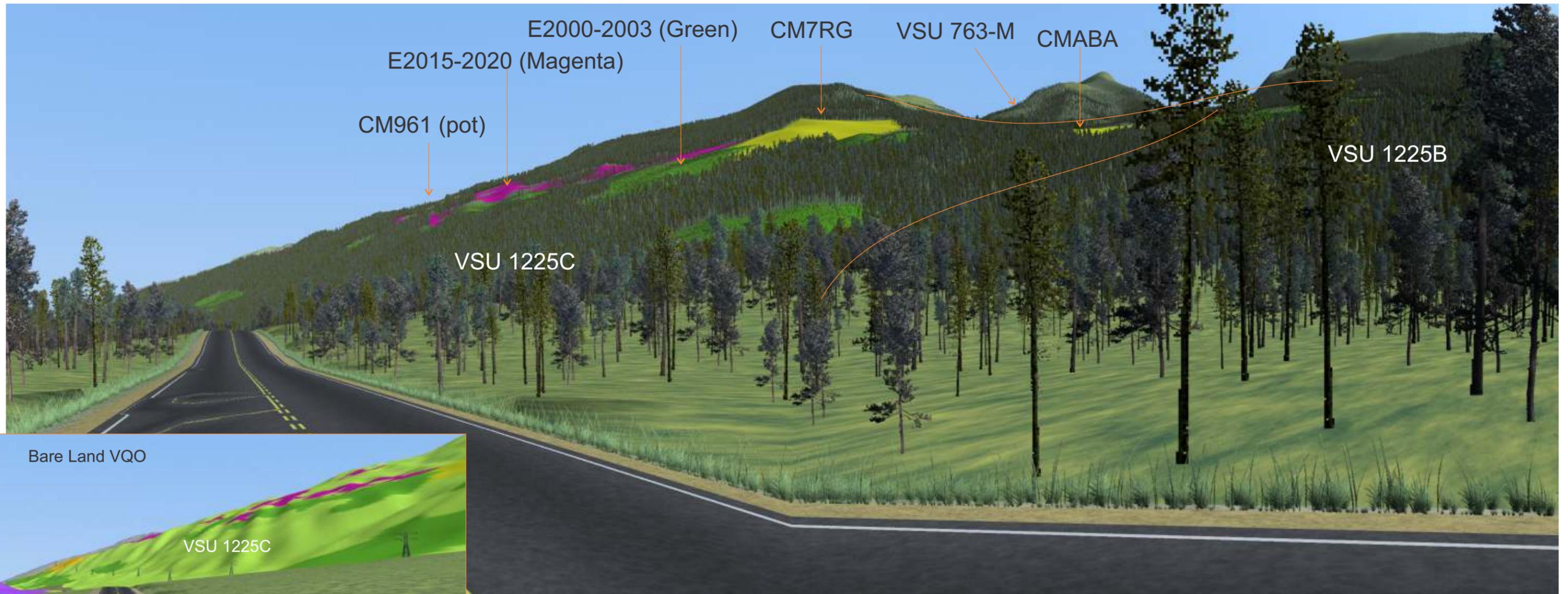
CC1 - 1730 North View



Percent Alteration C1 - Photo Limit of Visibility & Full Simulation				
NAME	AREA2	% Alt	% Alt	
VSU1225C-PR within Photo	289214.13		by Type	
CMABA	8294.30	2.87%	7.46%	
CM7RG	13291.13	4.60%		
E2015-2020	2270.33	0.78%	2.88%	
E2015-2020	2357.90	0.82%		
E2015-2020	2934.19	1.01%		
E2015-2020	503.36	0.17%		
E2015-2020	267.72	0.09%		
Sum Alt New&nonVEG	29918.93	10.34%	10.34%	
Existing VEG within Photo	not included in above	% Alt	by Type	
E2000-2003	15586.92	5.39%	9.05%	
E2000-2003	3400.75	1.18%		
E2000-2003	7187.07	2.49%		
Sum Existing VEG	26174.74	9.05%	9.05%	
Add VSU1225C-PR_outside Photo	43456.54			
Sum Simulation (within and outside of Photo)	332670.67			
CMABA	8294.30	2.49%	7.20%	
CM7RG	13291.13	4.00%		
CM961_LOV	683.29	0.21%		
CM961_LOV	1478.17	0.44%		
E2015-2020	2270.33	0.68%	3.86%	
E2015-2020	2357.90	0.71%		
E2015-2020	2934.19	0.88%		
E2015-2020	503.36	0.15%		
E2015-2020	267.72	0.08%		
E2015-2020LOV	362.37	0.11%		
E2015-2020_LOV	1445.10	0.43%		
E2015-2020_LOV	2712.93	0.82%		
Alt New & nonVEG - Simulation Total	36799.19	11.06%		11.06%
Existing VEG within Simulation including of Photo	not included in above	% Alt		by Type
E2000-2003	15586.92	4.69%	10.49%	
E2000-2003	3400.75	1.02%		
E2000-2003	7187.07	2.16%		
E2000-2003_LOV	353.99	0.11%		
E2000-2003_LOV	8353.33	2.51%		
Sum VEG within Simulation incl. Photo	34882.06	10.49%	10.49%	

CC1-9733-9739-June 22, 2021-Ches Clem Photo

CC1 Percent Alteration



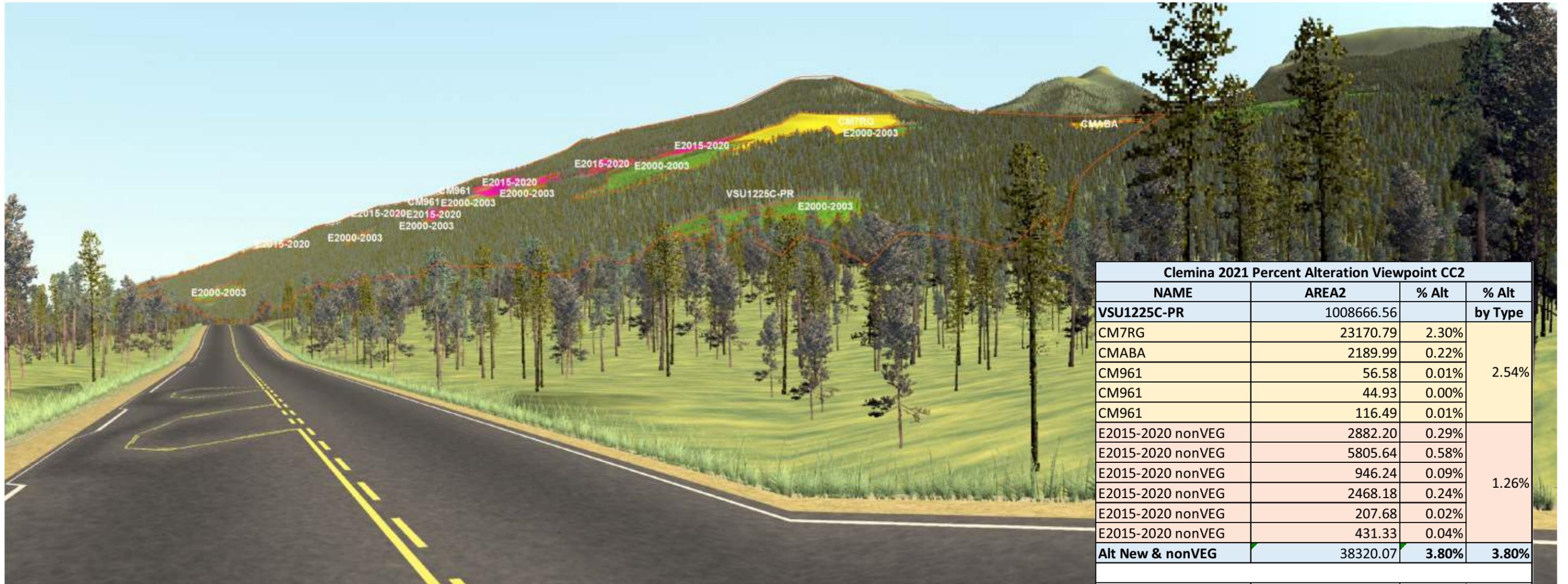
- Visual Force Convexity
- Visual Force Concavity

CC2-9743-9751-June 22, 2021-Near 1730.1/281

Photo by Ches Clem 2021; Panorama by RDI

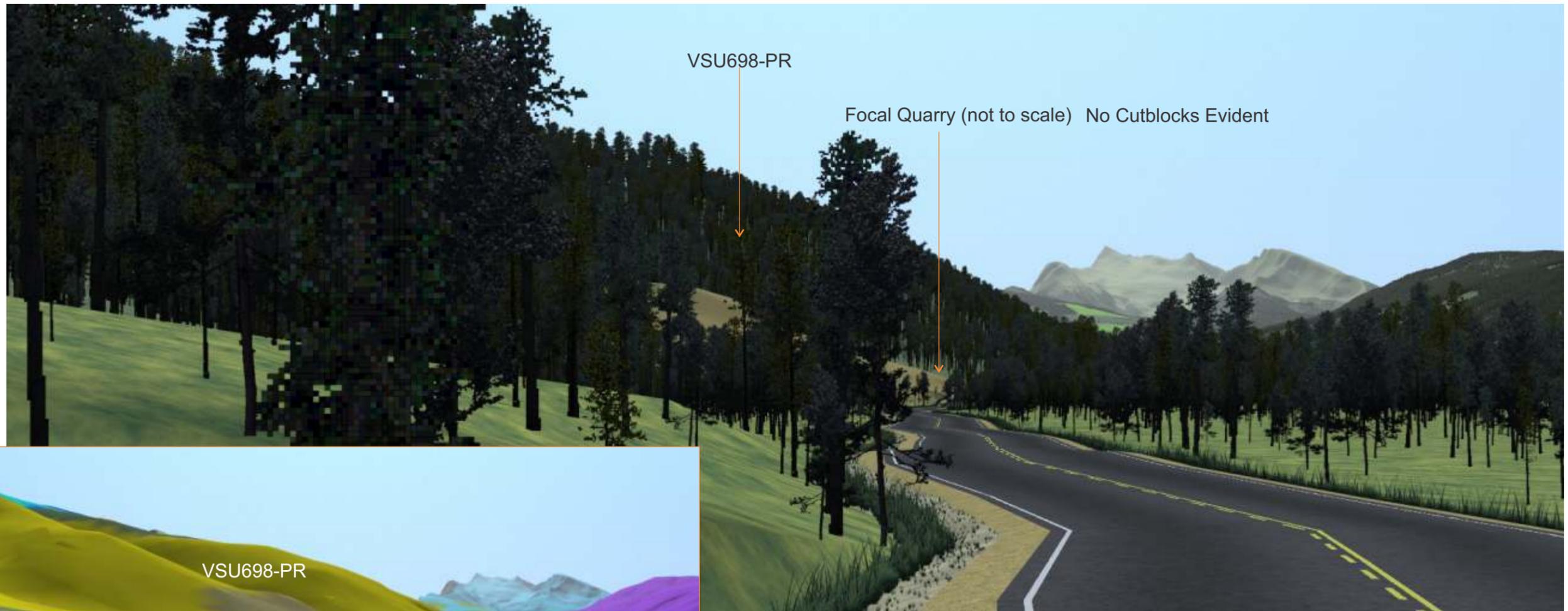
CC2 - 1730.1 (North)





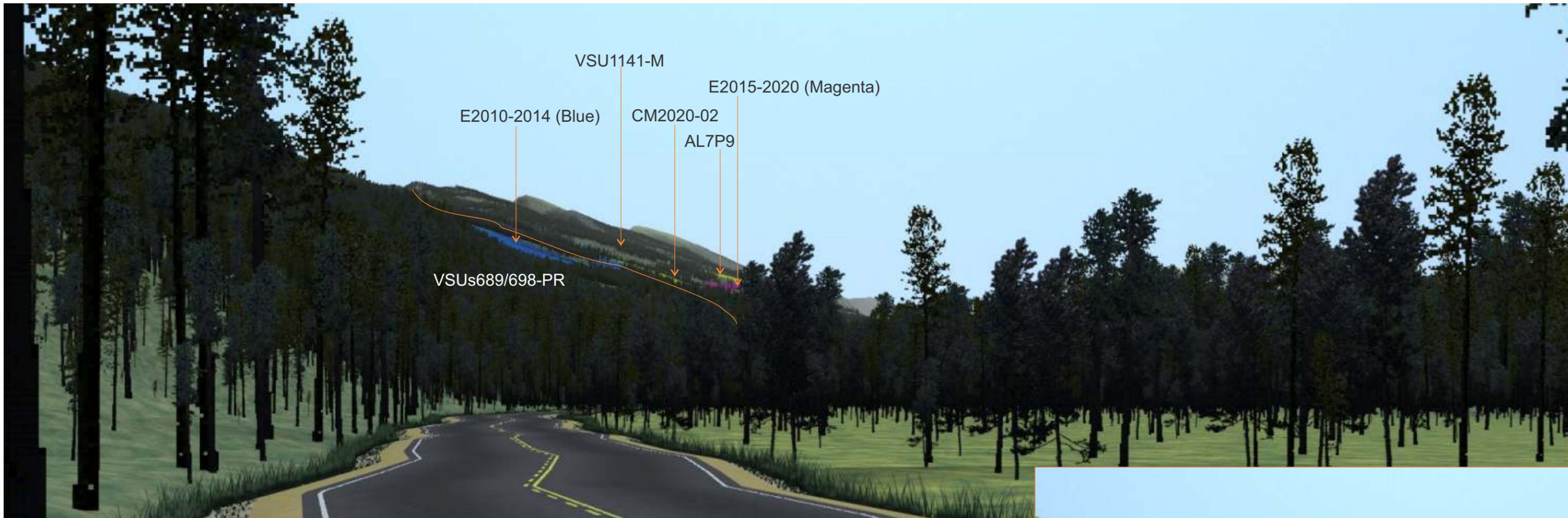
Clemina 2021 Percent Alteration Viewpoint CC2			
NAME	AREA2	% Alt	% Alt
VSU1225C-PR	1008666.56		by Type
CM7RG	23170.79	2.30%	2.54%
CMABA	2189.99	0.22%	
CM961	56.58	0.01%	
CM961	44.93	0.00%	
CM961	116.49	0.01%	
E2015-2020 nonVEG	2882.20	0.29%	1.26%
E2015-2020 nonVEG	5805.64	0.58%	
E2015-2020 nonVEG	946.24	0.09%	
E2015-2020 nonVEG	2468.18	0.24%	
E2015-2020 nonVEG	207.68	0.02%	
E2015-2020 nonVEG	431.33	0.04%	
Alt New & nonVEG	38320.07	3.80%	3.80%
Existing VEG 2000-2003			
			% Alt
E2000-2003	24805.88	2.46%	6.38%
E2000-2003	5240.20	0.52%	
E2000-2003	25030.58	2.48%	
E2000-2003	3076.41	0.30%	
E2000-2003	333.85	0.03%	
E2000-2003	710.90	0.07%	
E2000-2003	3416.39	0.34%	
E2000-2003	1692.38	0.17%	
E-Sum Alt VEG	64306.59	6.38%	





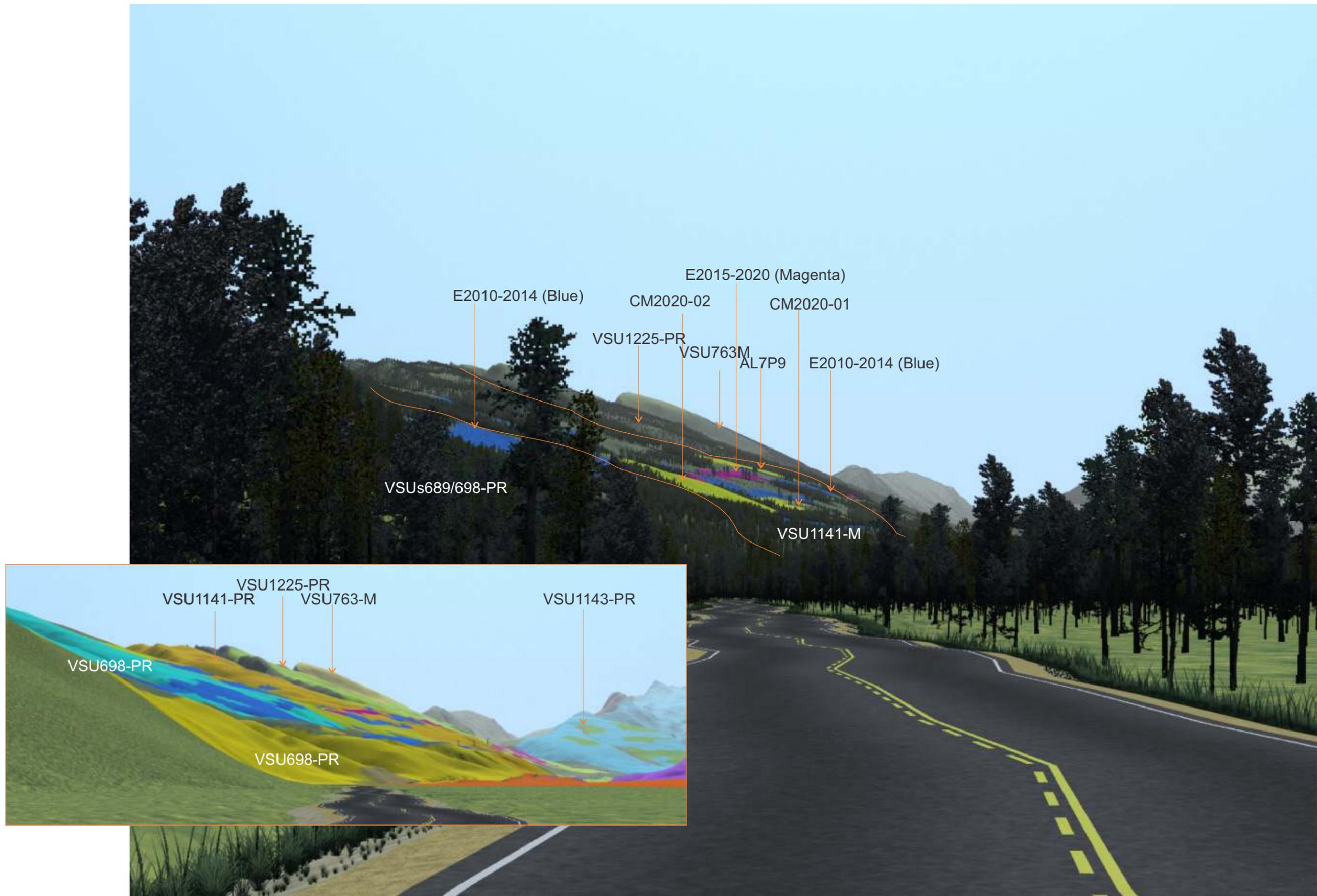
CC3-9752-9754-June 22, 2021-Near 1731-2a2-Ches Clem Photo

CC3 - (South)

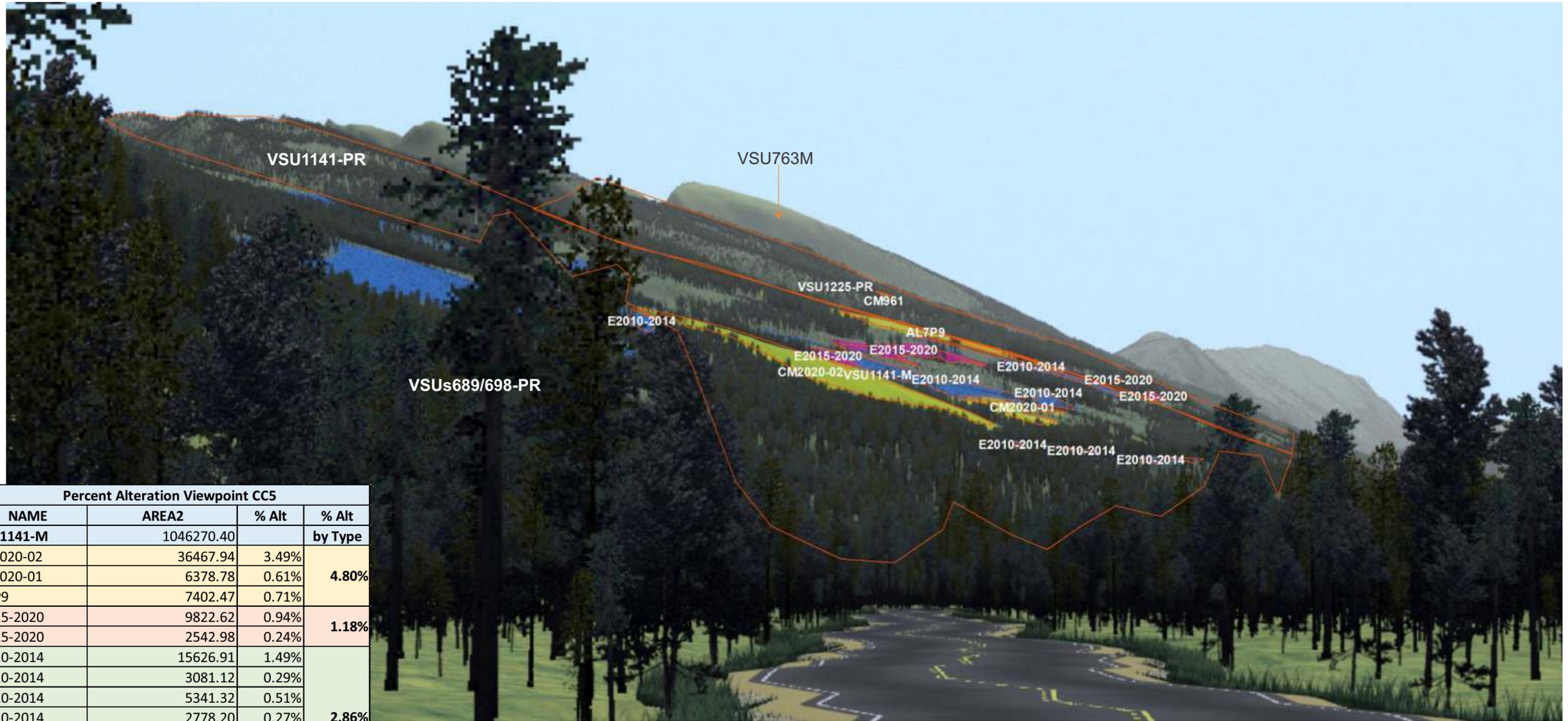


CC4 -1730.4 (South)

CC4-9755-9756-June 22, 2021-Ches Clem Photo



— Landform breaks form strong visual force lines



Percent Alteration Viewpoint CC5			
NAME	AREA2	% Alt	% Alt
VSU 1141-M	1046270.40		by Type
CM2020-02	36467.94	3.49%	4.80%
CM2020-01	6378.78	0.61%	
AL7P9	7402.47	0.71%	
E2015-2020	9822.62	0.94%	1.18%
E2015-2020	2542.98	0.24%	
E2010-2014	15626.91	1.49%	2.86%
E2010-2014	3081.12	0.29%	
E2010-2014	5341.32	0.51%	
E2010-2014	2778.20	0.27%	
E2010-2014	2173.27	0.21%	
E2010-2014	707.10	0.07%	
E2010-2014	257.21	0.02%	
Sum Alt VSU 1141	92579.91	8.85%	
VSU 1225-M	213611.29		
CM961	240.18	0.11%	0.11%
E2015-2020	822.71	0.39%	0.44%
E2015-2020	125.47	0.06%	
Sum Alt VSU 1225	1188.35	0.56%	0.56%

CC5 Percent Alteration