BOB AND CRYSTAL RILEE PARK TRAILS INVENTORY AND MAPPING PROJECT

Comprehensive Data Collection and Analysis Report

Abstract

This report outlines the data collection methods and analysis findings for the Bob and Crystal Rilee Park Trails Inventory and Mapping Project completed during Quentin Comus' Fall 2022 CPRD GIS Internship.

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Table of Contents

Background Information

Chehalem Park and Recreation District (CPRD) is a local tax district in Yamhill County. Their mission is to connect and enrich our community through parks, recreation, open space, natural resources, and educational opportunities. Altogether, CPRD owns and manages approximately 848 acres of public neighborhood parks, community centers, recreation facilities, and a golf course. They also serve upwards of 30,000 people through fitness classes, senior citizen activities, and youth sports leagues.

This internship provides CPRD an opportunity to inventory, manage, expand, and improve its recreational trail system through field-based GIS data collection, refinement, classification, analysis, and presentation. The work focuses on the 327-acre Bob and Crystal Rilee Park on Parrett Mountain. This park is home to approximately 20 miles of hiking, cycling, and equestrian trails, in addition to a heritage farm listed on the National Register of Historic Places. Altogether, this internship produced a digital inventory of the trails at the Bob and Crystal Rilee Park classified using the *USFS Trail Fundamentals and Trail Management Objectives*. The data collected and analyzed during this internship will then be used to create trail signage and user maps, determine trail uses/restrictions, and inform management practices.

Data Collection and Analysis Methods

This project focuses on collecting spatially accurate trail routes and trail characteristics data. In doing so, a combination of professional geographic information system (GIS) software tools were used alongside analog measurement tools.

Specifically, all trail route data was collected using Esri's *Field Maps* mobile application on a Samsung S21 Ultra smartphone. The trail routes are generated by the mobile application's streaming function, which continuously records geographic positioning system (GPS) points, or vertices, every five (5) feet to produce three-dimensional polylines. This GPS data gathered in the field is accurate within 25 feet on a 95-percent confidence interval. Trail routes were generated for all visible and accessible trails within CPRD's tax lot boundaries at Bob and Crystal Rilee Park between September 30 and November 27, 2022. A new trail route, or segment, was generated between each trail intersection. In addition to generating geospatial trail routes, analog trail characteristics data was collected in the field.

This characteristics data is based on the *USFS Trail Fundamentals and Trail Management Objectives* report. In particular, it includes trail beginning and ending termini, length, managed use, classification, tread type, tread width, and clearing height. Trail length was generated by trail route data through Esri's *Field Maps* mobile application. Managed use was determined by evidence of specific-use tread wear and institutional knowledge. The trail class was determined by personal evaluation against parameters set forth in the *USFS Trail Fundamentals and Trail Management Objectives* report. The tread type was determined by personal evaluation. The tread width was determined by averaging tread width measurements taken at the beginning and ending termini, and then at 200-foot intervals, of each trail segment. The clearing height was determined by measuring the distance of the lowest tree trunk/branch overhanging the trail to the tread, if applicable. All measurements were taken using a standard 25-foot contractor's measuring tape. All data was recorded in waterproof notebooks in the field and transposed into a digital spreadsheet upon return to the office.

Further data calculation was conducted in Microsoft's *Excel* desktop application to determine each trail segment's compliance with the Americans with Disabilities Act (ADA) trail accessibility guidelines. This includes an acceptable trail grade of 5% to 8.33% over 200-foot intervals, 8.33% to 10% over 30-foot intervals, 10% to 12% over 10-foot intervals, and a maximum running grade of 5%. Compliance was determined by calculating the grade over each instance of each interval within each trail segment. For example, if a trail segment is 400 feet long, approximately 40 200-foot interval grade calculations were generated, 74 30-foot interval grade calculations were generated, and so on. Then, if any of these interval grade calculations exceed the maximum allowable grade for the compliance level, the trail segment failed that particular compliance level altogether.

The trail route data and trail characteristics data was then combined in Esri's *ArcGIS Pro* desktop application for further analysis and mapmaking. In particular, the trail route data was inspected and modified for inconsistencies in vertex placement and connection. Then, these polylines were simplified, and the trail characteristics data was imported into the layer. These variables were then used to symbolize the layer for various external and internal applications.

Trail System Summary

Overall, the trail system at Bob and Crystal Rilee Park consists of 104 trail segments totaling 12.4 miles of multi-use trails accessible to the public. Approximately 5 miles of trails are located on the tax lot east of Parrett Mountain Road where the heritage farm is located. The additional 7 miles of trails are located on the tax lots west of Parrett Mountain Road. These trails provide unique recreation experiences for pedestrians, cyclists, and equestrians. They are accessible from a trailhead parking lot in the northeast corner of the southwest tax lot and a trailhead originating from the heritage farm parking lot. This section of the report provides summary statistics of the entire trail system.
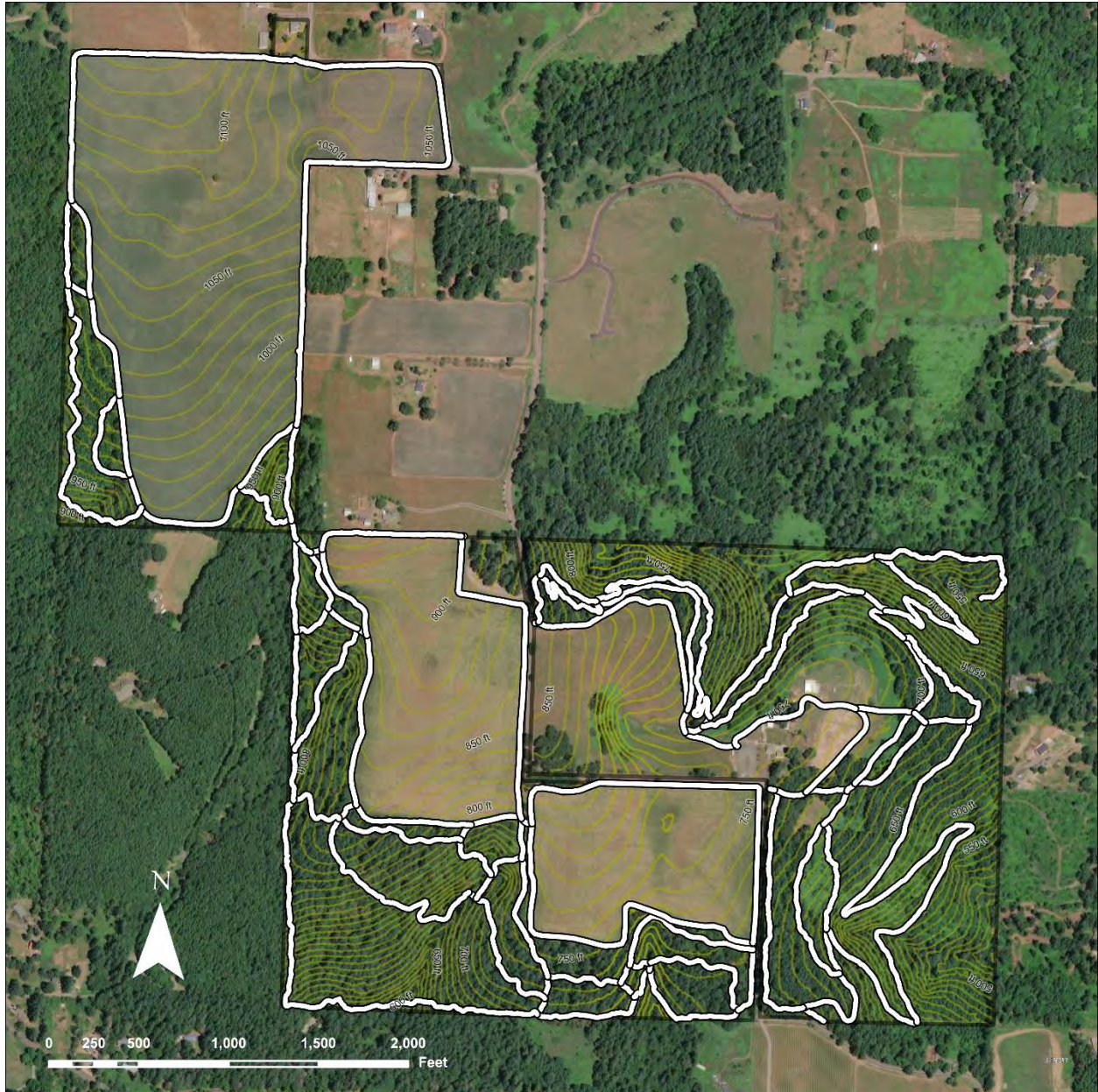

Figure 1 - Trails at Bob and Crystal Rilee Park

Comparing the trails located within the east and west tax lots, the trails east of Parrett Mountain Road are more developed. Specifically, the trails in the east tax lot have an average class of 3.62, while the trails in the west tax lot have an average class of 2.98.
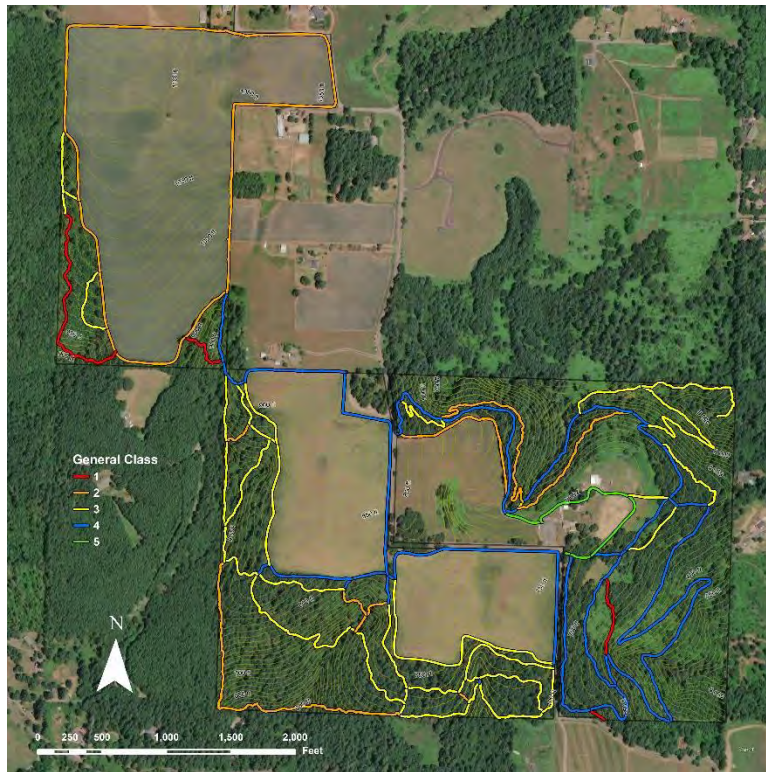

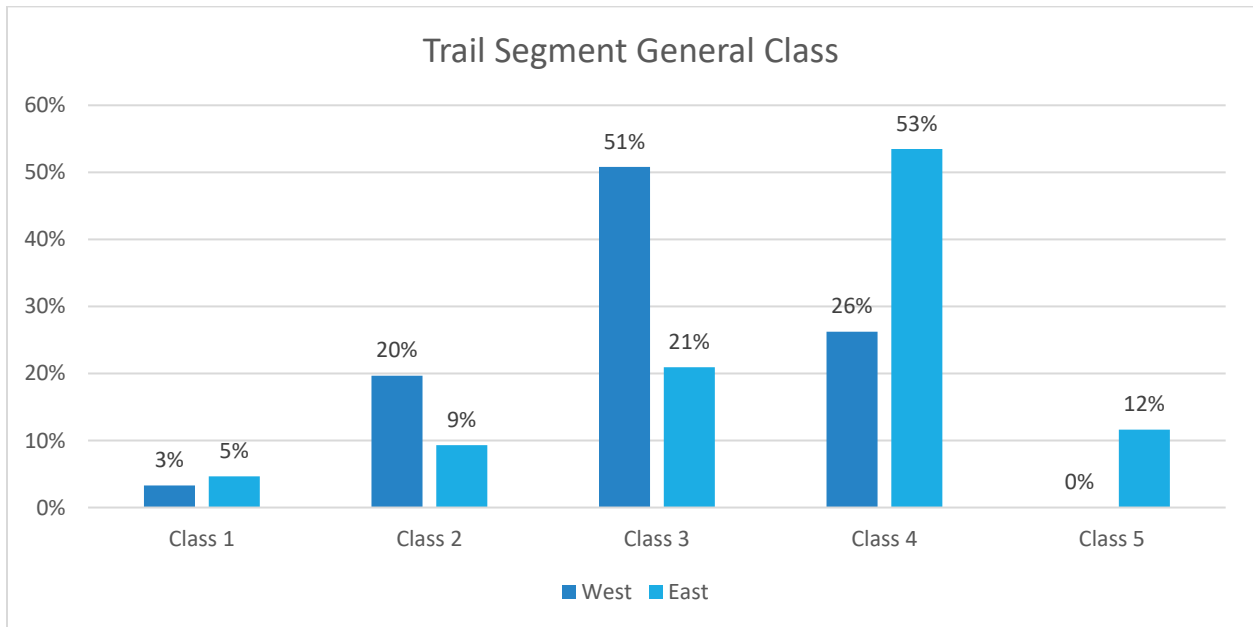*Figure 2 - Trails at Bob and Crystal Rilee Park by General Class*

Figure 3 - Percentage of Trail Segments by General Class

These conclusions are supported by tread width and clearing height measurements gathered in the field. The average tread width of trails on the east side of Parrett Mountain Road is 52.32 inches compared to 38.35 inches on the west side. Likewise, the average clearing height of trails within the east tax lot is 100.56 inches, while the clearing height of trails within the west tax lots is 87.00 inches.
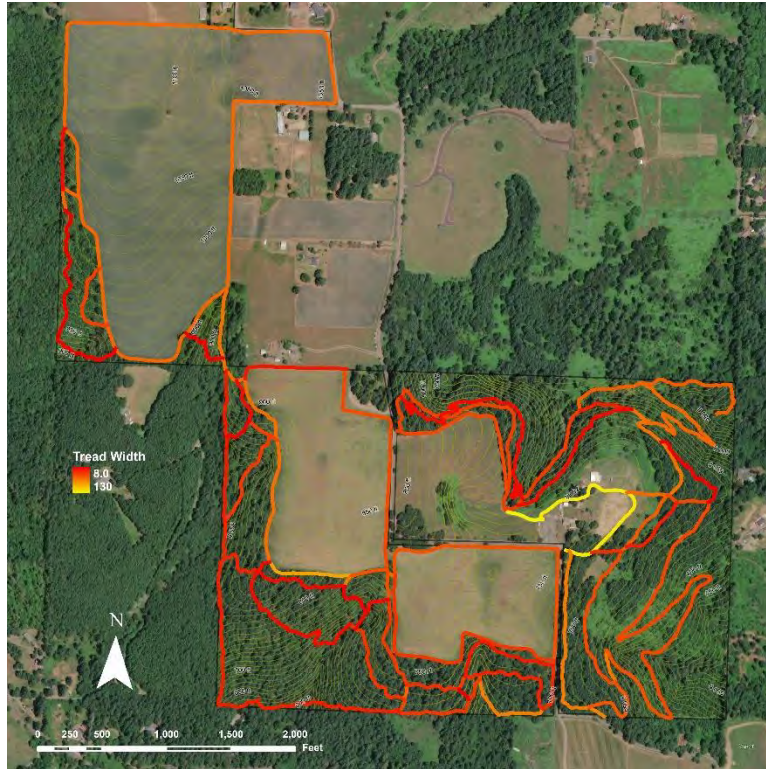

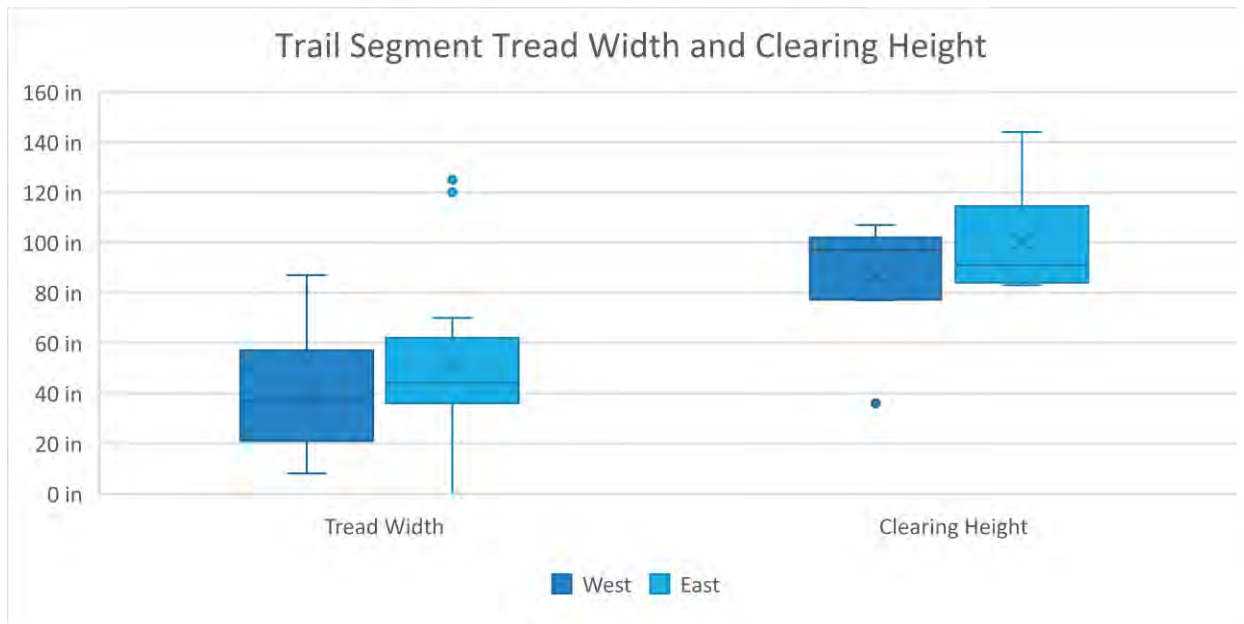*Figure 4 - Trails at Bob and Crystal Rilee Park by Tread Width*

Figure 5 - Box-and-Wisker Plots of Trail Segment Tread Width and Clearing Height

The average running grade of trails within the east and west tax lots are 7.93% and 8.92%, respectively. Considering this data, the trails were evaluated for compliance with ADA trail grade guidelines. In particular, 49% of trails east of Parrett Mountain Road are in compliance with the maximum 8.33% grade over 200-foot intervals guideline. Only 20% of trails were in compliance with the maximum 10% grade over 30-foot intervals guideline, and 15% of trails were in compliance with the maximum 12% grade over 10-foot intervals guideline within the west tax lots. This suggests that trails on the east of Parrett Mountain Road have less elevation change compared to those west of Parrett Mountain Road. No trail segments passed the maximum 5% true grade guideline on either side of Parrett Mountain Road.
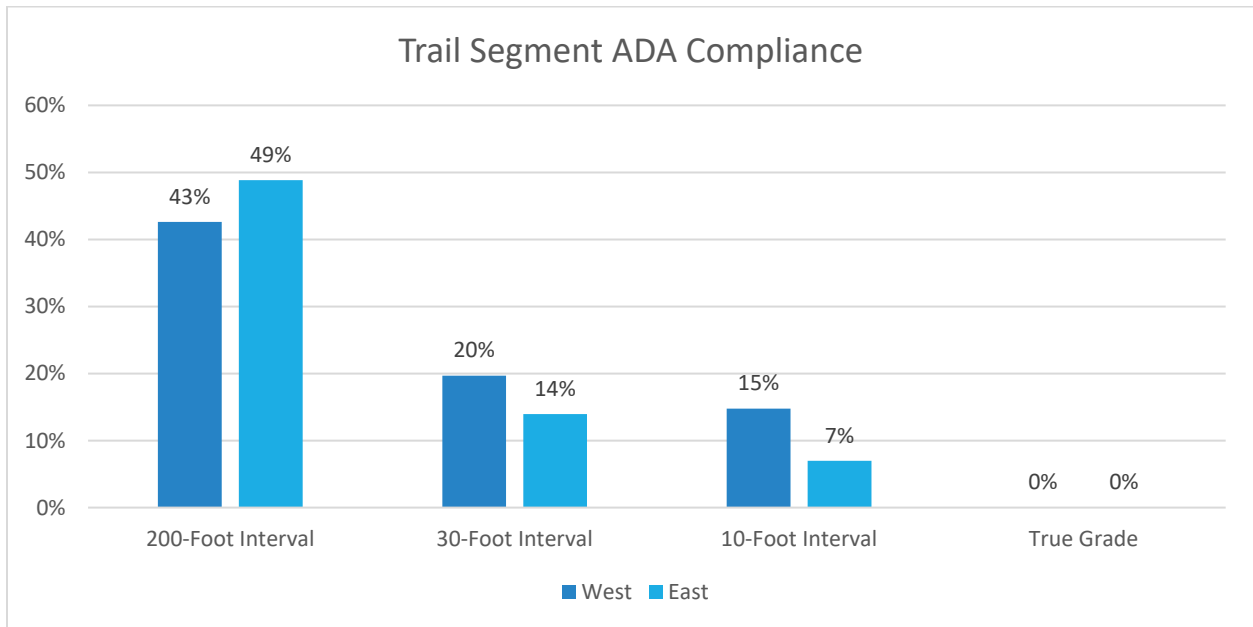

Figure 6 - Percentage of Trail Segments in Compliance with ADA Trail Grade Guidelines

The trail inventory and associated internal maps are attached to this report for reference.
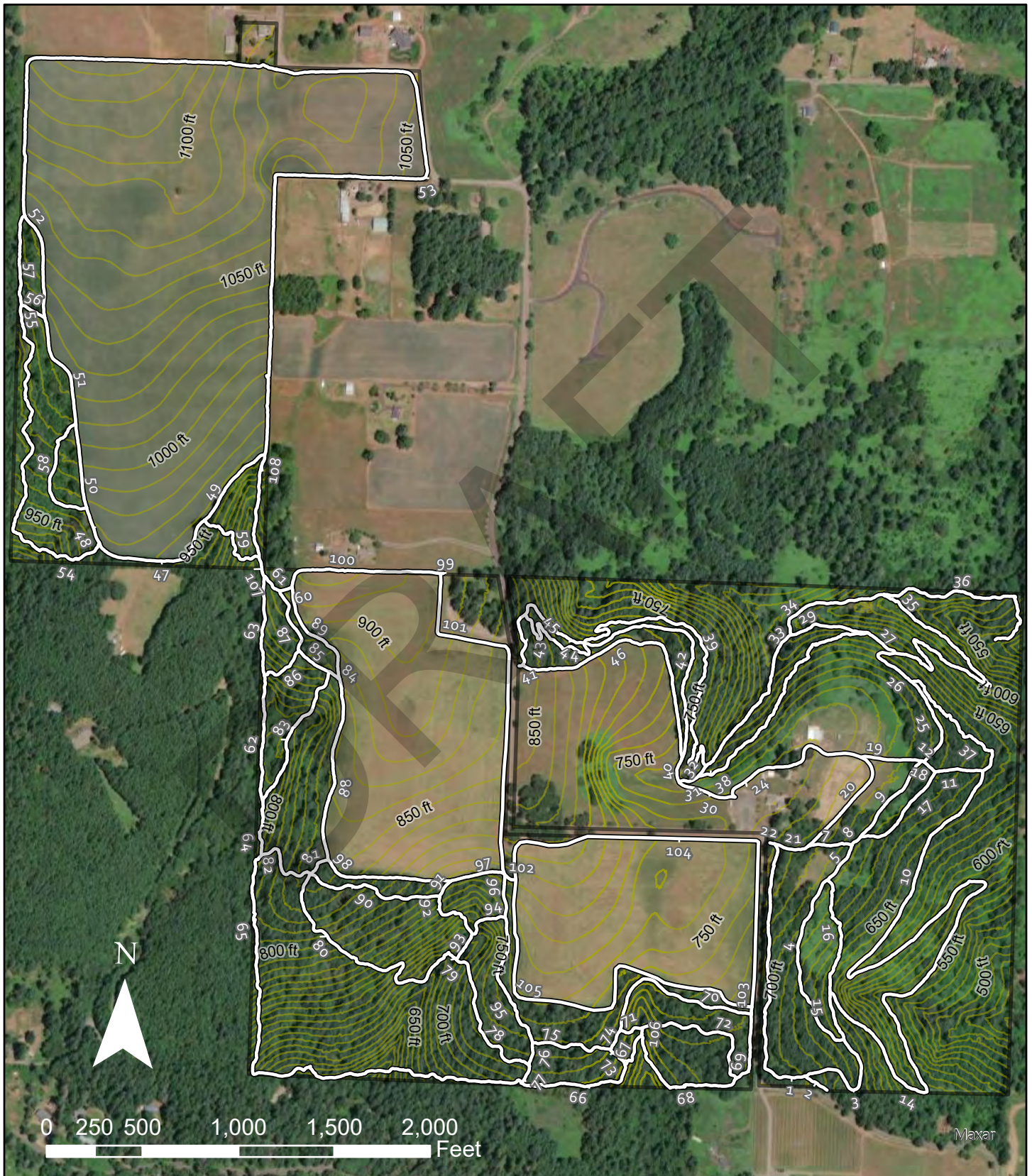
Original Trail Number	Original Beg Termini	Original End Termini	New Trail Number	New Beg Termini	New End Termini	Trail Name	Managed Use	Length (ft)	3D Length (ft)	Map Distance (mi)	Type	Tread Surface	Tread Width (in)	Clearing Height (in)	General (Visual) Class	Pedestrian Class	Horse Class	Bicycle Class	200ft ADA Compliance	30ft ADA Compliance	10ft ADA Compliance	True ADA Compliance	Avg Grade
1	Trail #14	Trail #2 JCT Trail #3	1	Trail #21 JCT Trail #22	Trail #2 JCT Trail #3	N/A	Pedestrian	1436.918136	1450.492625	0.27	Standard Terra Trail	Dirt	67	144	4	4	4	4	PASS	FAIL	FAIL	FAIL	3.69%
2	Trail #1 JCT Trail #3		2	Trail #1 JCT Trail #3		N/A	Pedestrian	139.0798471	139.8250249	0.03	Standard Terra Trail	Natural Surface	70	N/A	1	2	2	1	PASS	FAIL	FAIL	FAIL	1.99%
3	Trail #1 JCT Trail #2	Trail #4 JCT Trail #9	3	Trail #1 JCT Trail #2	Trail #4 JCT Trail #15	N/A	Pedestrian	628.0319815	638.8465983	0.12	Standard Terra Trail	Dirt	48	N/A	4	4	4	4	FAIL	FAIL	FAIL	FAIL	7.45%
4	Trail #3 JCT Trail #9	Trail #5 JCT Trail #6	4	Trail #3 JCT Trail #15	Trail #5 JCT Trail #16	N/A	Pedestrian	997.6770406	1001.049201	0.19	Standard Terra Trail	Dirt	44	N/A	4	4	4	4	FAIL	FAIL	FAIL	FAIL	8.56%
4	Trail #3 JCT Trail #9	Trail #5 JCT Trail #6	5	Trail #4 JCT Trail #16	Trail #7 JCT Trail #8	N/A	Pedestrian	230.9225426	231.2410873	0.04	Standard Terra Trail	Dirt	44	N/A	4	4	4	4	PASS	PASS	FAIL	FAIL	6.03%
5	Trail #4 JCT Trail #6	Trail #13 JCT Trail #14	7	Trail #5 JCT Trail #8	Trail #20 JCT Trail #21	N/A	Pedestrian	235.120763	238.404282	0.04	Standard Terra Trail	Dirt	31	N/A	4	4	4	4	FAIL	FAIL	FAIL	FAIL	9.62%
6	Trail #4 JCT Trail #5	Trail #7 JCT Trail #12 JCT Trail #16	8	Trail #5 JCT Trail #7	Trail #9 JCT Trail #17	N/A	Pedestrian	62.28820247	64.57480021	0.01	Standard Terra Trail	Dirt	52	N/A	4	4	4	4	PASS	FAIL	FAIL	FAIL	3.61%
6	Trail #4 JCT Trail #5	Trail #7 JCT Trail #12 JCT Trail #16	9	Trail #8 JCT Trail #17	Trail #18 JCT Trail #19	N/A	Pedestrian	520.8188305	522.7267263	0.10	Standard Terra Trail	Dirt	52	N/A	4	4	4	4	PASS	FAIL	FAIL	FAIL	7.97%
7	Trail #6 JCT Trail #12 JCT Trail #16	Trail #8	10	Trail #11 JCT Trail #37	Trail #14	N/A	Pedestrian	3667.87366	3683.486811	0.69	Standard Terra Trail	Dirt	42	N/A	4	4	4	4	FAIL	FAIL	FAIL	FAIL	5.96%
7	Trail #6 JCT Trail #12 JCT Trail #16	Trail #8	11	Trail #12 JCT Trail #17	Trail #10 JCT Trail #37	N/A	Pedestrian	247.667605	249.4712162	0.05	Standard Terra Trail	Dirt	42	N/A	4	4	4	4	FAIL	FAIL	FAIL	FAIL	0.13%
7	Trail #6 JCT Trail #12 JCT Trail #16	Trail #8	12	Trail #18 JCT Trail #25	Trail #11 JCT Trail #17	N/A	Pedestrian	79.41838928	86.62470039	0.02	Standard Terra Trail	Dirt	42	N/A	4	4	3	2	PASS	FAIL	FAIL	FAIL	11.83%
8	Trail #7	Trail #9 JCT Trail #10	14	Trail #10	Trail #15 JCT Trail #16	N/A	Pedestrian	770.3059531	776.726613	0.15	Standard Terra Trail	Dirt	47	N/A	4	4	3	2	FAIL	FAIL	FAIL	FAIL	10.97%
9	Trail #8 JCT Trail #10	Trail #3 JCT Trail #4	15	Trail #14 JCT Trail #16	Trail #3 JCT Trail #4	N/A	Pedestrian	265.8232065	269.1666436	0.05	Standard Terra Trail	Dirt	66	N/A	4	4	4	4	PASS	FAIL	FAIL	FAIL	7.23%
10	Trail #8 JCT Trail #9	Trail #4	16	Trail #14 JCT Trail #15	Trail #4 JCT Trail #5	N/A	Pedestrian	655.9732573	665.9536128	0.12	Standard Terra Trail	Natural Surface	N/A	N/A	1	1	2	1	FAIL	FAIL	FAIL	FAIL	12.77%
11	Trail #6	Trail #7	17	Trail #8 JCT Trail #9	Trail #11 JCT Trail #12	N/A	Pedestrian	559.8986685	564.0739183	0.11	Standard Terra Trail	Dirt	22	100	3	4	3	3	FAIL	FAIL	FAIL	FAIL	6.77%
11	Trail #6	Trail #7	18	Trail #12 JCT Trail #25	Trail #9 JCT Trail #19	N/A	Pedestrian	12.80867274	12.99121008	0.00	Standard Terra Trail	Dirt	42	N/A	3	3	3	3	PASS	PASS	PASS	FAIL	11.24%
12	Trail #6 JCT Trail #7 JCT Trail #16	Trail #13 JCT Trail #15	19	Trail #18 JCT Trail #9	Trail #20 JCT Trail #24	N/A	Pedestrian	320.8899018	321.8700318	0.06	Standard Terra Trail	Natural Surface	58	N/A	3	3	3	3	FAIL	FAIL	FAIL	FAIL	10.25%
13	Trail #12 JCT Trail #15	Trail #5 JCT Trail #14	20	Trail #19 JCT Trail #24	Trail #7 JCT Trail #21	N/A	Pedestrian	617.4944753	619.0879678	0.12	Standard Terra Trail	Gravel	120	N/A	5	5	4	5	PASS	FAIL	FAIL	FAIL	3.68%
14	Trail #5 JCT Trail #13	Parrett Mountain Road	21	Trail #7 JCT Trail #20	Trail #1 JCT Trail #22	N/A	Pedestrian	186.5265533	187.365128	0.04	Standard Terra Trail	Gravel	120	N/A	5	4	4	4	PASS	FAIL	FAIL	FAIL	8.31%
14	Trail #5 JCT Trail #13	Parrett Mountain Road	22	Trail #1 JCT Trail #21	Old Parrett Mountain Road	N/A	Pedestrian	24.9301887	25.04488187	0.00	Standard Terra Trail	Gravel	120	N/A	5	3	3	3	PASS	PASS	FAIL	FAIL	14.14%
15	Parking Lot	Trail #12 JCT Trail #13	24	Parking Lot	Trail #19 JCT Trail #20	N/A	Pedestrian	827.9351076	1094.01844	0.16	Standard Terra Trail	Gravel	120	N/A	5	5	4	5	PASS	FAIL	FAIL	FAIL	3.54%
16	Trail #6 JCT Trail #7 JCT Trail #12	Trail #17 JCT Trail #21	25	Trail #12 JCT Trail #18	Trail #26 JCT Trail #37	N/A	Pedestrian	502.0397773	504.0917586	0.10	Standard Terra Trail	Dirt	62	N/A	4	4	4	4	PASS	PASS	FAIL	FAIL	6.11%
16	Trail #6 JCT Trail #7 JCT Trail #12	Trail #17 JCT Trail #21	26	Trail #25 JCT Trail #37	Trail #27 JCT Trail #35	N/A	Pedestrian	318.1535625	319.0493423	0.06	Standard Terra Trail	Dirt	62	N/A	4	4	3	2	FAIL	FAIL	FAIL	FAIL	11.00%
16	Trail #6 JCT Trail #7 JCT Trail #12	Trail #17 JCT Trail #21	27	Trail #26 JCT Trail #35	Trail #29 JCT Trail #38	N/A	Pedestrian	182.60829	184.3596885	0.03	Standard Terra Trail	Dirt	62	N/A	4	4	3	2	PASS	FAIL	FAIL	FAIL	12.54%
17	Trail #16 JCT Trail #21	Trail #19 JCT Trail #20	29	Trail #27 JCT Trail #38	Trail #33 JCT Trail #34	N/A	Pedestrian	422.3220416	425.5018678	0.08	Standard Terra Trail	Dirt	23	N/A	4	4	3	3	FAIL	FAIL	FAIL	FAIL	8.12%
18	Parking Lot	Trail #19 JCT Trail #26	30	Parking Lot	Trail #31 JCT Trail #40	N/A	Pedestrian	307.8304113	308.3062928	0.06	Standard Terra Trail	Dirt	125	N/A	5	5	4	5	FAIL	FAIL	PASS	FAIL	1.31%
19	Trail #18 JCT Trail #26	Trail #17 JCT Trail #20	31	Trail #30 JCT Trail #40	Trail #32 JCT Trail #38	N/A	Pedestrian	112.510212	112.6306776	0.02	Standard Terra Trail	Dirt	36	N/A	4	4	3	3	PASS	FAIL	FAIL	FAIL	6.23%
19	Trail #18 JCT Trail #26	Trail #17 JCT Trail #20	32	Trail #31 JCT Trail #38	Trail #33 JCT Trail #39	N/A	Pedestrian	63.43294712	63.66256423	0.01	Standard Terra Trail	Dirt	36	N/A	3	3	2	2	PASS	FAIL	FAIL	FAIL	19.68%
19	Trail #18 JCT Trail #26	Trail #17 JCT Trail #20	33	Trail #32 JCT Trail #39	Trail #29 JCT Trail #34	N/A	Pedestrian	861.3630566	865.7243282	0.16	Standard Terra Trail	Dirt	36	N/A	4	4	3	3	FAIL	FAIL	FAIL	FAIL	9.66%
20	Trail #17 JCT Trail #19	Trail #21 JCT Trail #22	34	Trail #29 JCT Trail #33	Trail #35 JCT Trail #36	N/A	Pedestrian	618.1727938	624.7936208	0.12	Standard Terra Trail	Dirt	54	N/A	3	3	3	3	FAIL	FAIL	FAIL	FAIL	11.27%
21	Trail #20 JCT Trail #22	Trail #16 JCT Trail #17	35	Trail #34 JCT Trail #36	Trail #26 JCT Trail #27	N/A	Pedestrian	1670.775713	1684.927721	0.32	Standard Terra Trail	Dirt	57	91	3	3	3	3	FAIL	FAIL	FAIL	FAIL	9.07%
22	Trail #20 JCT Trail #21		36	Trail #34 JCT Trail #35		N/A	Pedestrian	1071.162375	1082.499853	0.20	Standard Terra Trail	Dirt	53	84	3	3	3	2	FAIL	FAIL	FAIL	FAIL	13.80%
23	Trail #16	Trail #7	37	Trail #25 JCT Trail #26	Trail #10 JCT Trail #11	N/A	Bicycle	763.2844758	775.1043883	0.14	Standard Terra Trail	Dirt	12	83	3	2	2	2	PASS	FAIL	FAIL	FAIL	9.05%
24	Trail #17	Trail #19	38	Trail #27 JCT Trail #29	Trail #31 JCT Trail #32	N/A	Bicycle	1320.671565	1345.370152	0.25	Standard Terra Trail	Dirt	14	99	2	2	2	3	FAIL	FAIL	FAIL	FAIL	7.75%
25	Trail #19	Trail #26 JCT Trail #27	39	Trail #32 JCT Trail #33	Trail #42 JCT Trail #44 JCT Trail #45	N/A	Bicycle	1826.635736	1840.928721	0.35	Standard Terra Trail	Dirt	13	91	2	2	2	3	FAIL	FAIL	FAIL	FAIL	5.92%
26	Trail #18 JCT Trail #19	Parrett Mountain Road	40	Trail #30 JCT Trail #31	Trail #42 JCT Trail #46	N/A	Pedestrian	133.22213	136.2884395	0.03	Standard Terra Trail	Dirt	39	N/A	4	4	4	4	PASS	FAIL	FAIL	FAIL	6.44%

Original Trail Number	Original Beg Termini	Original End Termini	New Trail Number	New Beg Termini	New End Termini	Trail Name	Managed Use	Length (ft)	3D Length (ft)	Map Distance (mi)	Type	Tread Surface	Tread Width (in)	Clearing Height (in)	General (Visual) Class	Pedestrian Class	Horse Class	Bicycle Class	200ft ADA Compliance	30ft ADA Compliance	10ft ADA Compliance	True ADA Compliance	Avg Grade
26	Trail #18 JCT Trail #19	Parrett Mountain Road	41	Old Parrett Mountain Road	Trail #43 JCT Trail #46	N/A	Pedestrian	23.20933183	23.32263818	0.00	Standard Terra Trail	Dirt	39	N/A	4	4	4	4	PASS	PASS	PASS	FAIL	6.06%
26	Trail #18 JCT Trail #19	Parrett Mountain Road	42	Trail #40 JCT Trail #46	Trail #39 JCT Trail #44 JCT Trail #45	N/A	Pedestrian	1259.797968	1267.011622	0.24	Standard Terra Trail	Dirt	39	N/A	4	4	4	4	FAIL	FAIL	FAIL	FAIL	4.99%
26	Trail #18 JCT Trail #19	Parrett Mountain Road	43	Trail #41 JCT Trail #46	Trail #44 JCT Trail #45	N/A	Pedestrian	294.3469556	295.9903736	0.06	Standard Terra Trail	Dirt	39	N/A	4	4	4	4	PASS	FAIL	FAIL	FAIL	5.64%
26	Trail #18 JCT Trail #19	Parrett Mountain Road	44	Trail #43 JCT Trail #46	Trail #39 JCT Trail #42 JCT Trail #45	N/A	Pedestrian	433.8588559	437.7465463	0.08	Standard Terra Trail	Dirt	39	N/A	4	4	4	4	FAIL		FAIL	FAIL	3.32%
27	Trail #26	Trail #25 JCT Trail #26	45	Trail #43 JCT Trail #44	Trail #39 JCT Trail #42 JCT Trail #44	N/A	Bicycle	669.8873592	676.2679255	0.13	Standard Terra Trail	Dirt	14	84	3	2	2	2	FAIL	FAIL	FAIL	FAIL	10.32%
28	Trail #26	Trail #26	46	Trail #41 JCT Trail #43	Trail #40 JCT Trail #42	N/A	Pedestrian	1396.002627	1402.37137	0.26	Standard Terra Trail	Grass	42	129	2	3	3	2	FAIL	FAIL	FAIL	FAIL	8.96%
29	Trail #74	Trail #74	47	Trail #49 JCT Trail #59	Trail #48 JCT Trail #54	Burt's 80 Field Loop	Pedestrian	712.8696341	713.3784402	0.14	Standard Terra Trail	Grass	57	N/A	2	3	3	2	PASS	PASS	FAIL	FAIL	4.94%
29	Trail #74	Trail #74	48	Trail #47 JCT Trail #54	Trail #50 JCT Trail #58	Burt's 80 Field Loop	Pedestrian	195.8078724	195.9714129	0.04	Standard Terra Trail	Grass	57	N/A	2	3	3	2	PASS	PASS	PASS	FAIL	5.37%
29	Trail #74	Trail #74	49	Trail #53 JCT Trail #108	Trail #47 JCT Trail #59	Burt's 80 Field Loop	Pedestrian	477.4931324	478.1636679	0.09	Standard Terra Trail	Grass	57	N/A	2	3	3	2	PASS	PASS	FAIL	FAIL	6.00%
29	Trail #74	Trail #74	50	Trail #48 JCT Trail #58	Trail #51 JCT Trail #58	Burt's 80 Field Loop	Pedestrian	444.3520024	444.6868061	0.08	Standard Terra Trail	Grass	57	N/A	2	3	3	2	FAIL	FAIL	FAIL	FAIL	9.96%
29	Trail #74	Trail #74	51	Trail #50 JCT Trail #58	Trail #52 JCT Trail #56	Burt's 80 Field Loop	Pedestrian	598.8210297	599.1365194	0.11	Standard Terra Trail	Grass	57	N/A	2	3	3	2	PASS	FAIL	FAIL	FAIL	6.30%
29	Trail #74	Trail #74	52	Trail #51 JCT Trail #56	Trail #53 JCT Trail #57	Burt's 80 Field Loop	Pedestrian	562.9391773	563.3092693	0.11	Standard Terra Trail	Grass	57	N/A	2	3	3	2	FAIL	FAIL	FAIL	FAIL	8.16%
29	Trail #74	Trail #74	53	Trail #52 JCT Trail #57	Trail #49 JCT Trail #108	Burt's 80 Field Loop	Pedestrian	5664.887119	5674.734022	1.07	Standard Terra Trail	Grass	57	N/A	2	3	3	2	FAIL	FAIL	FAIL	FAIL	6.04%
30	Trail #29	Trail #31	54	Trail #47 JCT Trail #58	Trail #55	Donald T. Everest Family Heritage Trail	Horse	1715.922599	1729.207818	0.32	Standard Terra Trail	Natural Surface	12	78	1	2	2	1	FAIL	FAIL	FAIL	FAIL	12.97%
31	Trail #30	Trail #29	55	Trail #54	Trail #56 JCT Trail #57	Dodild T. Everest Family Heritage Trail	Horse	167.6021245	168.6668555	0.03	Standard Terra Trail	Dirt	57	N/A	3	3	3	3	FAIL	FAIL	FAIL	FAIL	3.09%
31	Trail #30	Trail #29	56	Trail #55 JCT Trail #57	Trail #51 JCT Trail #52	N/A	Horse	141.847108	142.7367991	0.03	Standard Terra Trail	Dirt	57	N/A	3	3	3	3	PASS	FAIL	FAIL	FAIL	3.62%
32	Trail #31	Trail #29	57	Trail #55 JCT Trail #56	Trail #52 JCT Trail #53	Donald T. Everest Family Heritage Trail	Horse	487.3842831	490.0095735	0.09	Standard Terra Trail	Dirt	13	N/A	3	3	3	3	FAIL	FAIL	FAIL	FAIL	3.60%
33	Trail #29	Trail #29	58	Trail #50 JCT Trail #51	Trail #48 JCT Trail #50	Linda Vista	Pedestrian	654.0381952	657.4660644	0.12	Standard Terra Trail	Natural Surface	39	107	3	3	2	2	FAIL	FAIL	FAIL	FAIL	10.33%
34	Trail #29	Trail #74	59	Trail #47 JCT Trail #49	Trail #107 JCT Trail #108	N/A	Horse	464.5162985	475.5237808	0.09	Standard Terra Trail	Dirt	10	N/A	1	1	2	1	FAIL	FAIL	FAIL	FAIL	21.63%
35	Trail #36 JCT Trail #74	Trail #59 JCT Trail #68	60	Trail #89 JCT Trail #100	Trail #61 JCT Trail #87	N/A	Pedestrian	67.55707111	67.82643082	0.01	Standard Terra Trail	Dirt	59	N/A	4	4	4	4	PASS	FAIL	FAIL	FAIL	4.60%
35	Trail #36 JCT Trail #74	Trail #59 JCT Trail #68	61	Trail #60 JCT Trail #87	Trail #63 JCT Trail #107	N/A	Pedestrian	115.0230418	119.5225736	0.02	Standard Terra Trail	Dirt	59	N/A	4	4	3	2	FAIL	FAIL	FAIL	FAIL	15.63%
36	Trail #35 JCT Trail #74	Trail #37 JCT Trail #55	62	Trail #65 JCT Trail #82	Trail #63 JCT Trail #86	Forest Lower Loop	Pedestrian	670.9519936	674.8922621	0.13	Standard Terra Trail	Dirt	21	N/A	3	3	3	3	FAIL	FAIL	FAIL	FAIL	5.95%
36	Trail #35 JCT Trail #74	Trail #37 JCT Trail #55	63	Trail #62 JCT Trail #86	Trail #61 JCT Trail #107	Forest Lower Loop	Pedestrian	525.9660245	528.4458864	0.10	Standard Terra Trail	Dirt	21	N/A	3	3	3	3	FAIL	FAIL	FAIL	FAIL	5.73%
37	Trail #36 JCT Trail #55	Trail #39 JCT Trail #54	64	Trail #62 JCT Trail #83	Trail #65 JCT Trail #82	Forest Lower Loop	Pedestrian	293.4350095	297.8586091	0.06	Standard Terra Trail	Dirt	26	N/A	3	3	3	3	FAIL	FAIL	FAIL	FAIL	12.11%
39	Trail #37 JCT Trail #54	Trail #40 JCT Trail #50	65	Trail #64 JCT Trail #82	Trail #66 JCT Trail #77	Curtis' Lower Loop	Pedestrian	2741.62646	3112.710614	0.52	Standard Terra Trail	Dirt	23	77	2	2	2	2	FAIL	FAIL	FAIL	FAIL	13.58%
40	Trail #39 JCT Trail #50	Trail #41 JCT Trail #73	66	Trail #65 JCT Trail #77	Trail #67 JCT Trail #73	N/A	Pedestrian	633.1563512	636.8885678	0.12	Standard Terra Trail	Dirt	34	N/A	3	3	3	3	PASS	FAIL	FAIL	FAIL	5.69%
40	Trail #39 JCT Trail #50	Trail #41 JCT Trail #73	67	Trail #66 JCT Trail #73	Trail #68 JCT Trail #106	N/A	Pedestrian	197.360114	199.5058411	0.04	Standard Terra Trail	Dirt	34	N/A	3	3	3	3	PASS	FAIL	FAIL	FAIL	8.57%
41	Trail #40 JCT Trail #73	Trail #42 JCT Trail #45	68	Trail #67 JCT Trail #106	Trail #69 JCT Trail #72	N/A	Pedestrian	712.6430381	718.5165234	0.13	Standard Terra Trail	Dirt	68	N/A	3	3	3	3	FAIL	FAIL	FAIL	FAIL	8.24%
42	Trail #41 JCT Trail #45	Trail #43 JCT Trail #71	69	Trail #68 JCT Trail #72	Trail #70 JCT Trail #103	N/A	Pedestrian	377.9016741	387.2287461	0.07	Standard Terra Trail	Dirt	28	N/A	3	3	3	3	PASS	PASS	PASS	FAIL	4.59%
43	Trail #42 JCT Trail #71	Trail #44 JCT Trail #47	70	Trail #69 JCT Trail #103	Trail #71 JCT Trail #74	N/A	Pedestrian	925.021828	927.1581812	0.18	Standard Terra Trail	Dirt	21	102	3	3	3	3	PASS	FAIL	FAIL	FAIL	6.48%
44	Trail #43 JCT Trail #47	Trail #45 JCT Trail #73	71	Trail #70 JCT Trail #74	Trail #72 JCT Trail #106	N/A	Pedestrian	133.3878685	523.0746702	0.03	Standard Terra Trail	Dirt	29	N/A	3	3	3	3	FAIL	FAIL	FAIL	FAIL	4.65%
45	Trail #44 JCT Trail #73	Trail #41 JCT Trail #42	72	Trail #71 JCT Trail #106	Trail #68 JCT Trail #69	Confession Trail	Pedestrian	752.9342892	756.4874605	0.14	Standard Terra Trail	Dirt	25	N/A	3	3	3	3	FAIL	FAIL	FAIL	FAIL	10.52%
46	Trail #40	Trail #47 JCT Trail #48	73	Trail #66 JCT Trail #67	Trail #74 JCT Trail #75	N/A	Pedestrian	113.4756297	114.5378468	0.02	Standard Terra Trail	Dirt	12	N/A	2	2	2	1	FAIL	FAIL	FAIL	FAIL	18.99%
47	Trail #46 JCT Trail #48	Trail #43 JCT Trail #44	74	Trail #73 JCT Trail #75	Trail #70 JCT Trail #71	N/A	Pedestrian	112.8869086	297.3110331	0.02	Standard Terra Trail	Dirt	38	N/A	3	3	3	3	PASS	PASS	FAIL	FAIL	6.26%
48	Trail #46 JCT Trail #47	Trail #49 JCT Trail #65	75	Trail #73 JCT Trail #74	Trail #76 JCT Trail #95	N/A	Pedestrian	441.7553252	453.6172547	0.08	Standard Terra Trail	Dirt	30	98	3	3	2	3	FAIL	FAIL	FAIL	FAIL	8.40%
49	Trail #48 JCT Trail #65	Trail #50 JCT Trail #51	76	Trail #75 JCT Trail #95	Trail #77 JCT Trail #78	N/A	Pedestrian	126.3890893	127.7509928	0.02	Standard Terra Trail	Dirt	56	N/A	3	3	2	2	PASS	FAIL	FAIL	FAIL	12.52%
50	Trail #49 JCT Trail #50	Trail #39 JCT Trail #40	77	Trail #76 JCT Trail #78	Trail #65 JCT Trail #66	N/A	Pedestrian	100.6421805	104.8394964	0.02	Standard Terra Trail	Dirt	44	N/A	3	3	2	2	PASS	FAIL	FAIL	FAIL	12.24%
51	Trail #49 JCT Trail #50	Trail #52	78	Trail #76 JCT Trail #77	Trail #79 JCT Trail #93	Bobcat Trail	Pedestrian	799.6346005	805.9134891	0.15	Standard Terra Trail	Dirt	33	N/A	3	3	2	2	FAIL	FAIL	FAIL	FAIL	12.51%

Original Trail Number	Original Beg Termini	Original End Termini	New Trail Number	New Beg Termini	New End Termini	Trail Name	Managed Use	Length (ft)	3D Length (ft)	Map Distance (mi)	Type	Tread Surface	Tread Width (in)	Clearing Height (in)	General (Visual) Class	Pedestrian Class	Horse Class	Bicycle Class	200ft ADA Compliance	30ft ADA Compliance	10ft ADA Compliance	True ADA Compliance	Avg Grade
51	Trail #49 JCT Trail #50	Trail #52	79	Trail #78 JCT Trail #93	Trail #80	Bobcat Trail	Pedestrian	55.77994134	63.93145778	0.01	Standard Terra Trail	Dirt	33	N/A	3	2	2	1	PASS	FAIL	FAIL	FAIL	16.19%
52	Trail #51	Trail #53 JCT Trail #54 JCT Trail #60	80	Trail #79	Trail #81 JCT Trail #82 JCT Trail #90	The Bottom Loop	Pedestrian	1349.581155	1363.053879	0.26	Standard Terra Trail	Dirt	14	96	3	2	2	1	FAIL	FAIL	FAIL	FAIL	10.48%
53	Trail #52 JCT Trail #54 JCT Trail #60	Trail #59 JCT Trail #67	81	Trail #80 JCT Trail #82 JCT Trail #90	Trail #88 JCT Trail #98	BA Way	Pedestrian	132.1670172	133.3692034	0.03	Standard Terra Trail	Dirt	15	N/A	4	3	3	3	PASS	PASS	PASS	FAIL	2.69%
54	Trail #52 JCT Trail #53 JCT Trail #60	Trail #37 JCT Trail #39	82	Trail #80 JCT Trail #81 JCT Trail #90	Trail #64 JCT Trail #65	Parret's Upper Loop	Pedestrian	388.8556434	403.9857128	0.07	Standard Terra Trail	Dirt	24	N/A	3	3	2	2	FAIL	FAIL	FAIL	FAIL	13.71%
55	Trail #36 Trail #37	Trail #56	83	Trail #62 JCT Trail #64	Trail #84 JCT Trail #85	Kimball Creek Trail	Pedestrian	808.5671794	816.9494198	0.15	Standard Terra Trail	Dirt	35	N/A	3	3	3	3	FAIL	FAIL	FAIL	FAIL	4.06%
56	Trail #59	Trail #57 JCT Trail #58	84	Trail #88 JCT Trail #89	Trail #83 JCT Trail #85	N/A	Pedestrian	66.15449339	72.4542417	0.01	Standard Terra Trail	Dirt	39	N/A	3	3	3	3	PASS	PASS	FAIL	FAIL	8.05%
56	Trail #59	Trail #57 JCT Trail #58	85	Trail #83 JCT Trail #84	Trail #86 JCT Trail #87	N/A	Pedestrian	196.9304456	198.4166415	0.04	Standard Terra Trail	Dirt	39	N/A	3	3	3	3	PASS	FAIL	FAIL	FAIL	4.86%
57	Trail #56 JCT Trail #58	Trail #36	86	Trail #85 JCT Trail #87	Trail #62 JCT Trail #63	Forest Upper Loop	Pedestrian	259.7326597	262.8412654	0.05	Standard Terra Trail	Dirt	12	102	2	1	2	1	FAIL	FAIL	FAIL	FAIL	22.60%
58	Trail #56 JCT Trail #57	Trail #35	87	Trail #85 JCT Trail #86	Trail #60 JCT Trail #61	Ed Casey's Way	Pedestrian	357.8660639	358.5880346	0.07	Standard Terra Trail	Dirt	16	N/A	3	2	2	2	FAIL	FAIL	FAIL	FAIL	3.65%
59	Trail #35 JCT Trail #68	Trail #53 JCT Trail #67	88	Trail #81 JCT Trail #90	Trail #84 JCT Trail #89	Dani's Field Loop	Pedestrian	969.4434071	970.0043242	0.18	Standard Terra Trail	Dirt	61	N/A	3	4	3	3	PASS	FAIL	FAIL	FAIL	4.76%
59	Trail #35 JCT Trail #68	Trail #53 JCT Trail #67	89	Trail #84 JCT Trail #88	Trail #60 JCT Trail #100	Dani's Field Loop	Pedestrian	585.805749	586.9364104	0.11	Standard Terra Trail	Dirt	61	N/A	3	4	3	3	FAIL	FAIL	FAIL	FAIL	7.95%
60	Trail #52 JCT Trail #53 JCT Trail #54	Trail #61 JCT Trail #62	90	Trail #80 JCT Trail #81 JCT Trail #82	Trail #91 JCT Trail #92	Willard's Way	Pedestrian	750.4582317	976.780153	0.14	Standard Terra Trail	Dirt	13	N/A	3	3	3	2	FAIL	FAIL	FAIL	FAIL	11.14%
61	Trail #60 JCT Trail #62	Trail #66 JCT Trail #67	91	Trail #90 JCT Trail #92	Trail #97 JCT Trail #98	N/A	Pedestrian	104.2541519	104.5662354	0.02	Standard Terra Trail	Dirt	67	N/A	4	4	4	4	PASS	FAIL	FAIL	FAIL	3.76%
62	Trail #60 JCT Trail #61	Trail #63 JCT Trail #64	92	Trail #90 JCT Trail #91	Trail #93 JCT Trail #94	Tomcat Trail	Pedestrian	332.8593452	1054.333198	0.06	Standard Terra Trail	Dirt	8	36	2	1	2	1	FAIL	FAIL	FAIL	FAIL	21.44%
63	Trail #62 JCT Trail #64	Trail #51	93	Trail #92 JCT Trail #94	Trail #78 JCT Trail #79	N/A	Pedestrian	159.2751392	161.7576766	0.03	Standard Terra Trail	Dirt	13	N/A	2	1	2	1	FAIL	FAIL	FAIL	FAIL	14.41%
64	Trail #62 JCT Trail #63	Trail #66 JCT Trail #65	94	Trail #92 JCT Trail #93	Trail #95 JCT Trail #96	N/A	Pedestrian	232.5970703	434.632619	0.04	Standard Terra Trail	Dirt	13	N/A	2	1	2	1	FAIL	FAIL	FAIL	FAIL	22.75%
65	Trail #64 JCT Trail #66	Trail #48 JCT Trail #49	95	Trail #94 JCT Trail #96	Trail #75 JCT Trail #76	Curtis' Upper Loop	Pedestrian	744.7227327	1541.902794	0.14	Standard Terra Trail	Dirt	37	N/A	3	3	3	3	PASS	FAIL	FAIL	FAIL	5.62%
66	Trail #64 JCT Trail #65	Trail #61 JCT Trail #67	96	Trail #94 JCT Trail #95	Trail #97 JCT Trail #101 JCT Trail #102	N/A	Pedestrian	227.1017693	415.9037859	0.04	Standard Terra Trail	Dirt	47	N/A	4	4	3	2	FAIL	FAIL	FAIL	FAIL	15.10%
66	Trail #64 JCT Trail #65	Trail #61 JCT Trail #67	97	Trail #96 JCT Trail #101 JCT Trail #102	Trail #91 JCT Trail #98	Dani's Field Loop	Pedestrian	289.3743844	289.6441154	0.05	Standard Terra Trail	Natural Surface	47	N/A	4	4	3	3	PASS	PASS	PASS	FAIL	4.10%
67	Trail #61 JCT Trail #66	Trail #53 JCT Trail #59	98	Trail #91 JCT Trail #98	Trail #81 JCT Trail #88	Dani's Field Loop	Pedestrian	685.640143	688.364222	0.13	Standard Terra Trail	Natural Surface	87	N/A	4	4	3	3	FAIL	FAIL	FAIL	FAIL	10.12%
68	Trail #35 JCT Trail #59	Trailhead Parking Lot	99	Trailhead Parking Lot	Trail #100 JCT Trail #101	Dani's Field Loop	Pedestrian	14.67646957	14.67646957	0.00	Standard Terra Trail	Natural Surface	20	N/A	4	4	3	3	PASS	PASS	PASS	FAIL	9.55%
68	Trail #35 JCT Trail #59	Trailhead Parking Lot	100	Trail #99 JCT Trail #101	Trail #60 JCT Trail #89	Dani's Field Loop	Pedestrian	841.9704159	844.4374758	0.16	Standard Terra Trail	Natural Surface	20	N/A	4	4	3	3	PASS	PASS	PASS	FAIL	4.58%
69	Trailhead Parking Lot	Trail #66 JCT Trail #70	101	Trail #99 JCT Trail #100	Trail #96 JCT Trail #97 JCT Trail #102	Dani's Field Loop	Pedestrian	1872.742744	2267.987871	0.35	Standard Terra Trail	Grass	43	N/A	4	4	3	3	FAIL	FAIL	PASS	FAIL	6.42%
70	Trail #66 JCT Trail #69	Trail #71 JCT Trail #72	102	Trail #96 JCT Trail #97 JCT Trail #101	Trail #104 JCT Trail #105	N/A	Pedestrian	69.58844609	260.3123767	0.01	Standard Terra Trail	Natural Surface	60	N/A	4	4	3	3	PASS	PASS	PASS	FAIL	3.89%
71	Trail #70 JCT Trail #72	Trail #42 JCT Trail #43	103	Trail #69 JCT Trail #70	Trail #104 JCT Trail #105	N/A	Pedestrian	36.84771587	218.1113119	0.01	Standard Terra Trail	Dirt	47	N/A	4	4	4	4	PASS	PASS	PASS	FAIL	4.53%
71	Trail #70 JCT Trail #72	Trail #42 JCT Trail #43	104	Trail #103 JCT Trail #105	Trail #102 JCT Trail #105	Curtis Field Loop	Pedestrian	2320.928769	2320.928769	0.44	Standard Terra Trail	Grass	47	N/A	4	4	3	3	FAIL	FAIL	FAIL	FAIL	5.79%
72	Trail #71	Trail #70 JCT Trail #71	105	Trail #102 JCT Trail #104	Trail #103 JCT Trail #104	Curtis Field Loop	Pedestrian	2096.23087	2096.23087	0.40	Standard Terra Trail	Grass	34	N/A	3	3	3	2	FAIL	FAIL	FAIL	FAIL	6.92%
73	Trail #44 JCT Trail #45	Trail #40 JCT Trail #41	106	Trail #67 JCT Trail #68	Trail #71 JCT Trail #72	N/A	Pedestrian	43.29549345	390.6539859	0.01	Standard Terra Trail	Dirt	54	N/A	4	4	4	4	PASS	PASS	FAIL	FAIL	1.39%
74	Trail #35 JCT Trail #36	Trail #29	107	Trail #61 JCT Trail #63	Trail #59 JCT Trail #108	N/A	Pedestrian	107.936054	109.8362376	0.02	Standard Terra Trail	Dirt	62	N/A	4	4	3	3	PASS	FAIL	FAIL	FAIL	9.82%
74	Trail #35 JCT Trail #36	Trail #29	108	Trail #59 JCT Trail #107	Trail #49 JCT Trail #53	N/A	Pedestrian	550.9381773	553.816541	0.10	Standard Terra Trail	Dirt	62	N/A	4	4	3	2	FAIL	FAIL	FAIL	FAIL	13.64%

Bob and Crystal Rilee Park Trails

Trail Numbers

Bob and Crystal Rilee Park Trails

Trail Names

Burt's 8o Field Loop
Burt's 8o Field Loop
Burt's 8o Field Loop
1100 ft
1050 ft
Burt's 8o Field Loop
1000 ft
Burt's 8o Field Loop
950 ft
900 ft
Linda Vista
Burt's 8o Field Loop
Dani's Field Loop
Forest Lower Loop
900 ft
850 ft
800 ft
750 ft
Kimball Creek Trail
Dani's Field Loop
Dani's Field Loop
750 ft
700 ft
650 ft
600 ft
650 ft
Curtis' Lower Loop
The Bottom Loop
Willard's Way
800 ft
750 ft
Curtis Field Loop
Curtis Field Loop
650 ft
600 ft
Bobcat Trail
Curtis Field Loop
750 ft
700 ft
550 ft
500 ft
700 ft
650 ft
Confession Trail
Curtis' Lower Loop

0 250 500 1,000 1,500 2,000
Feet

Maxar

By Quentin Comus and Islam Elwefati

Bob and Crystal Rilee Park Trails

Trail Distances

By Quentin Comus and Islam Elwefati

Updated 12/5/2022
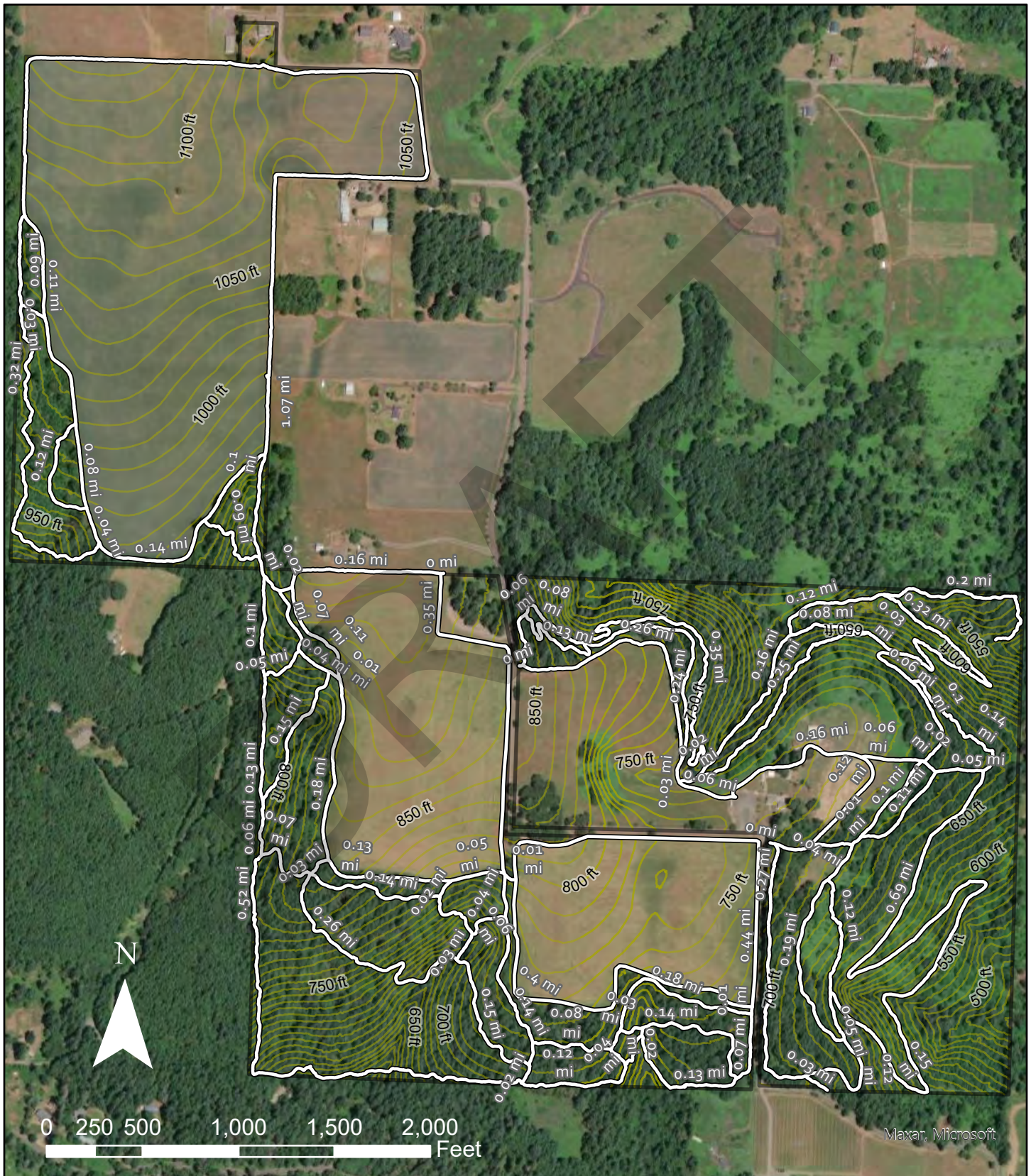
Bob and Crystal Rilee Park Trails

Managed Use (with Trail Numbers)

Managed Use
- Bicycle
- Horse
- Pedestrian

N

0   250   500   1,000   1,500   2,000
Feet

Maxar, Microsoft

Bob and Crystal Rilee Park Trails

General Class (with Trail Numbers)

General Class

- 1 (red)
- 2 (orange)
- 3 (yellow)
- 4 (blue)
- 5 (green)

N

0   250   500   1,000   1,500   2,000 Feet

Maxar, Microsoft

By Quentin Comus and Islam Elwefati

Bob and Crystal Rilee Park Trails

Pedestrian Class (with Trail Numbers)

Pedestrian Class
- 1 (red)
- 2 (orange)
- 3 (yellow)
- 4 (blue)
- 5 (green)

N

0 250 500 1,000 1,500 2,000
Feet

Maxar

By Quentin Comus and Islam Elwefati

Bob and Crystal Rilee Park Trails

Bicycle Class (with Trail Numbers)

Bicycle Class
- 1 (red)
- 2 (orange)
- 3 (yellow)
- 4 (blue)
- 5 (green)

N

0 250 500 1,000 1,500 2,000 Feet

Maxar

By Quentin Comus and Islam Elwefati
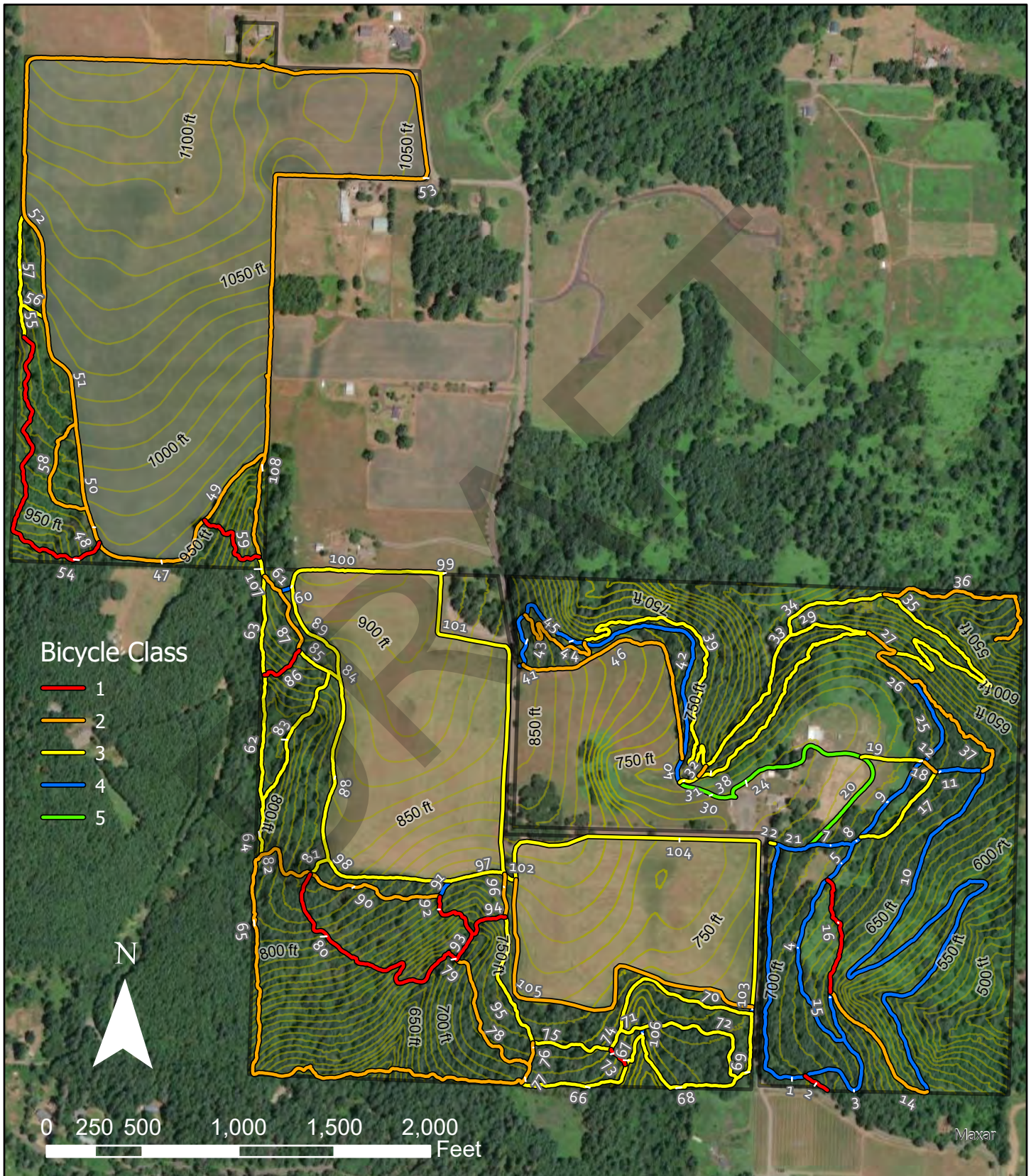
Bob and Crystal Rilee Park Trails

Horse Class (with Trail Numbers)

Horse Class
— 2
— 3
— 4

N

0   250 500   1,000   1,500   2,000
Feet

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Updated 12/5/2022
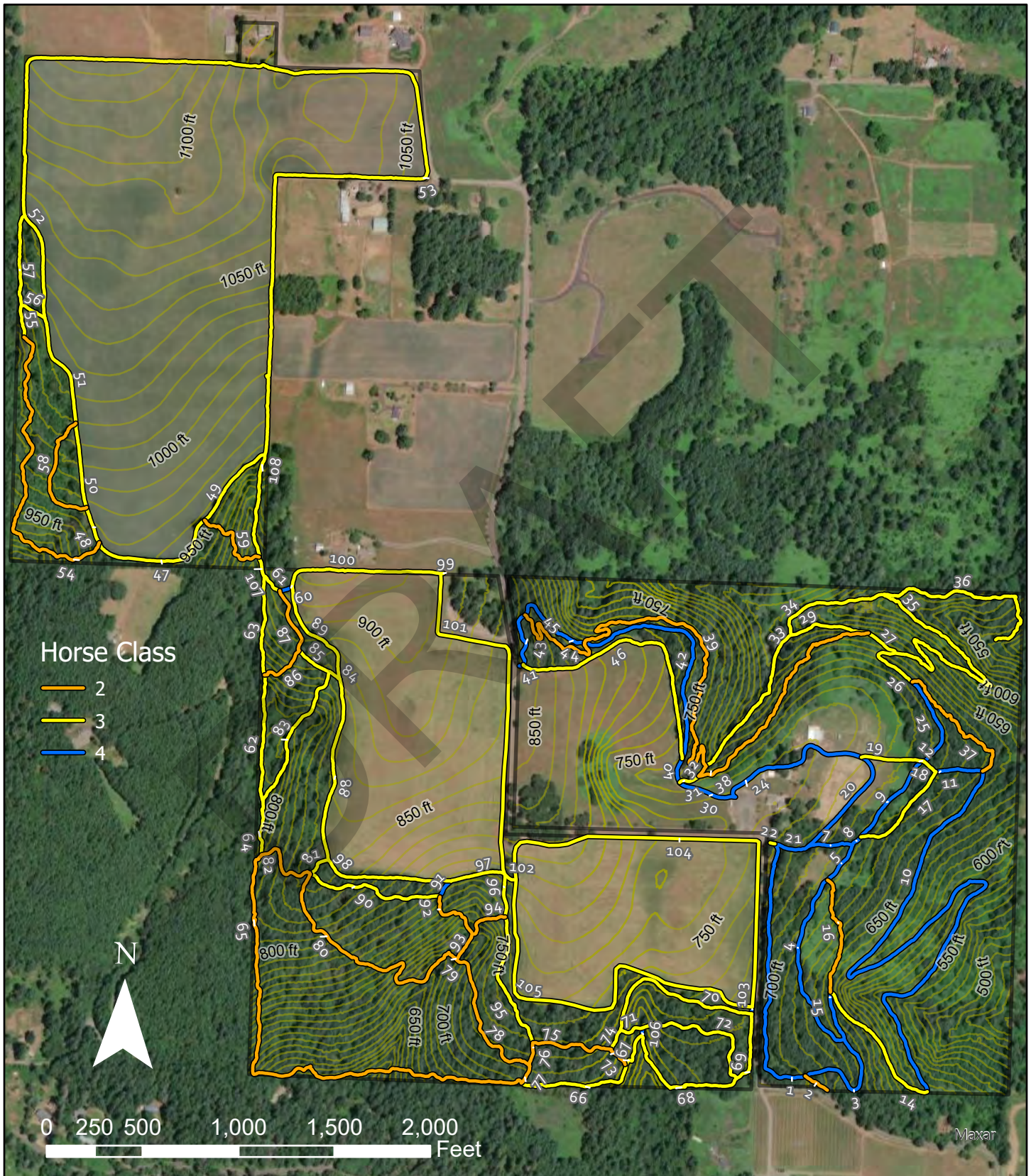
Bob and Crystal Rilee Park Trails

Average Grade (with Trail Numbers)

Average Grade

0.0013

0.23

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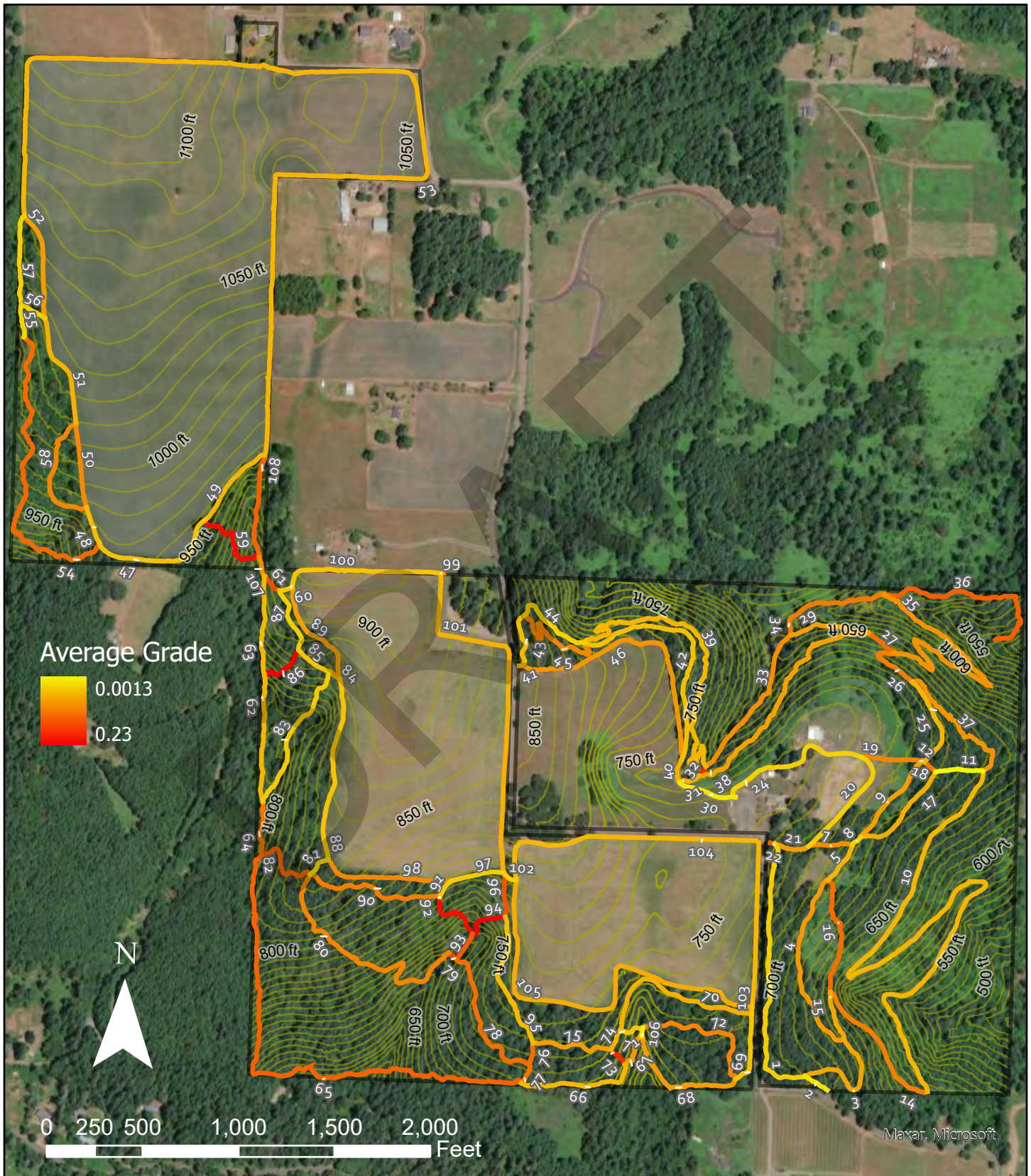
Bob and Crystal Rilee Park Trails

Americans with Disabilities Act (ADA) Compliance - 200ft Grade Recreation Trail Rule

ADA 200ft Compliance
— FAIL
— PASS

0   250 500   1,000   1,500   2,000
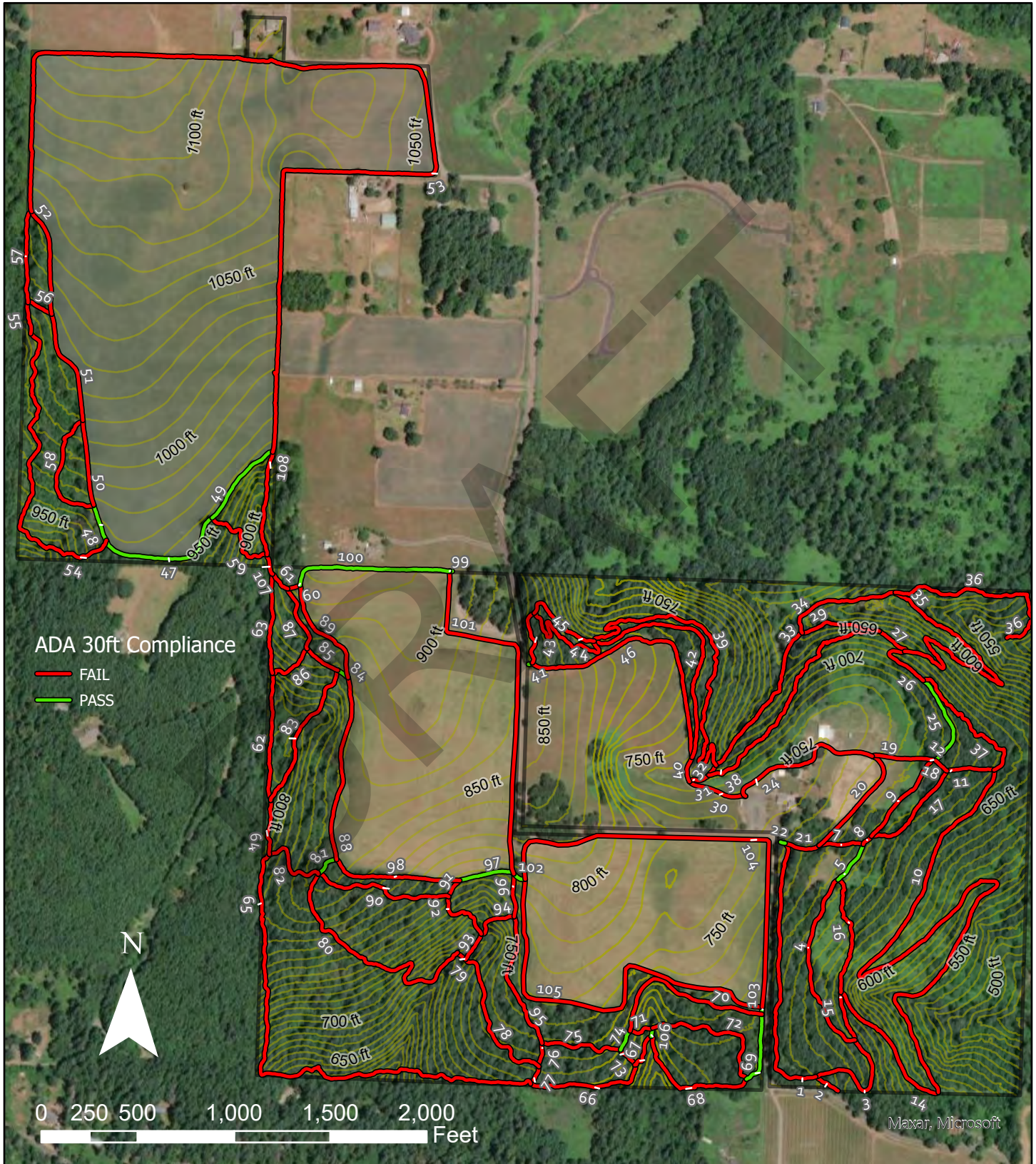Feet

N

Maxar

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Updated 12/6/2022
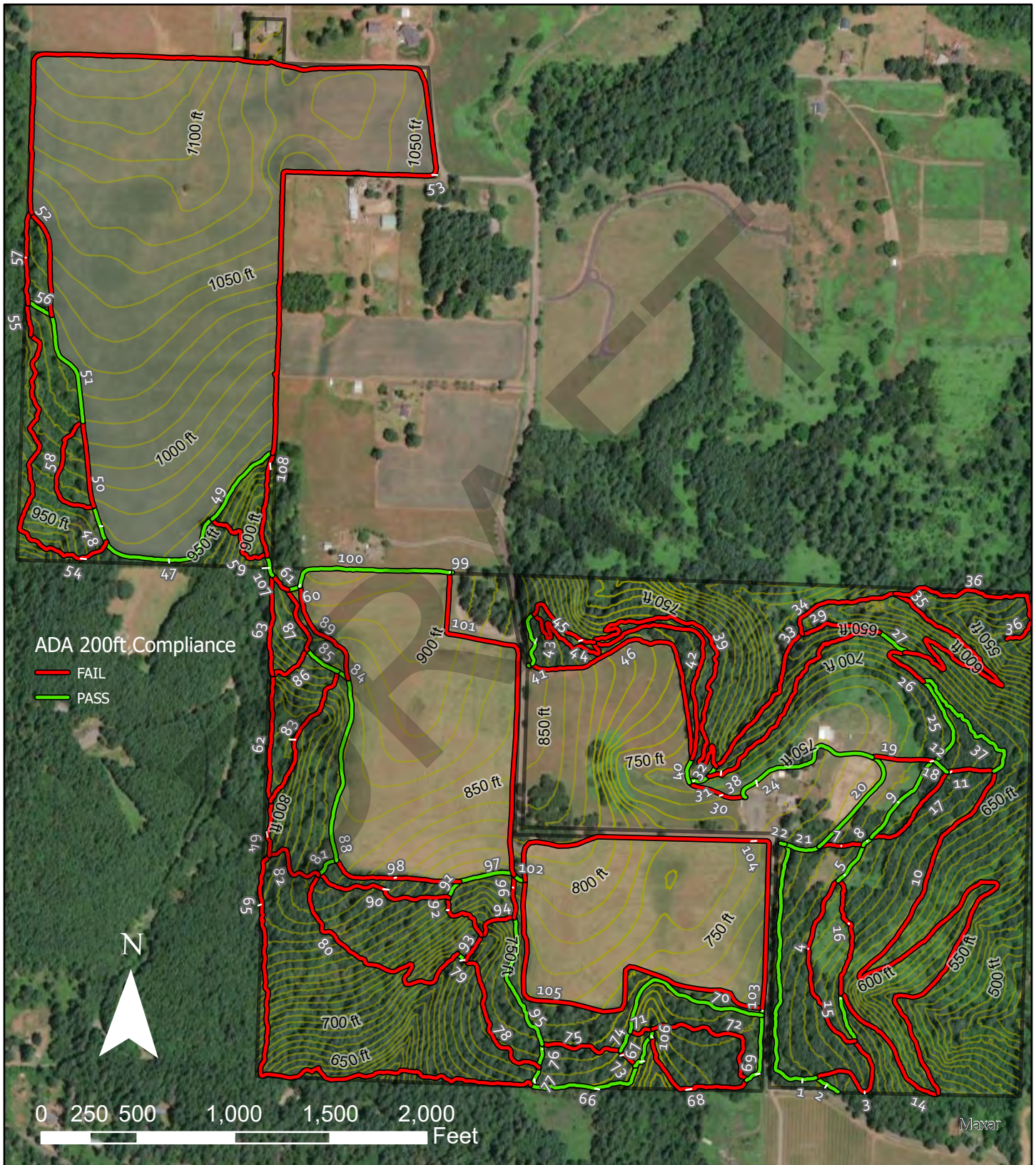
Bob and Crystal Rilee Park Trails

Americans with Disabilities Act (ADA) Compliance - 30ft Grade Recreation Trail Rule

ADA 30ft Compliance
— FAIL
— PASS

N

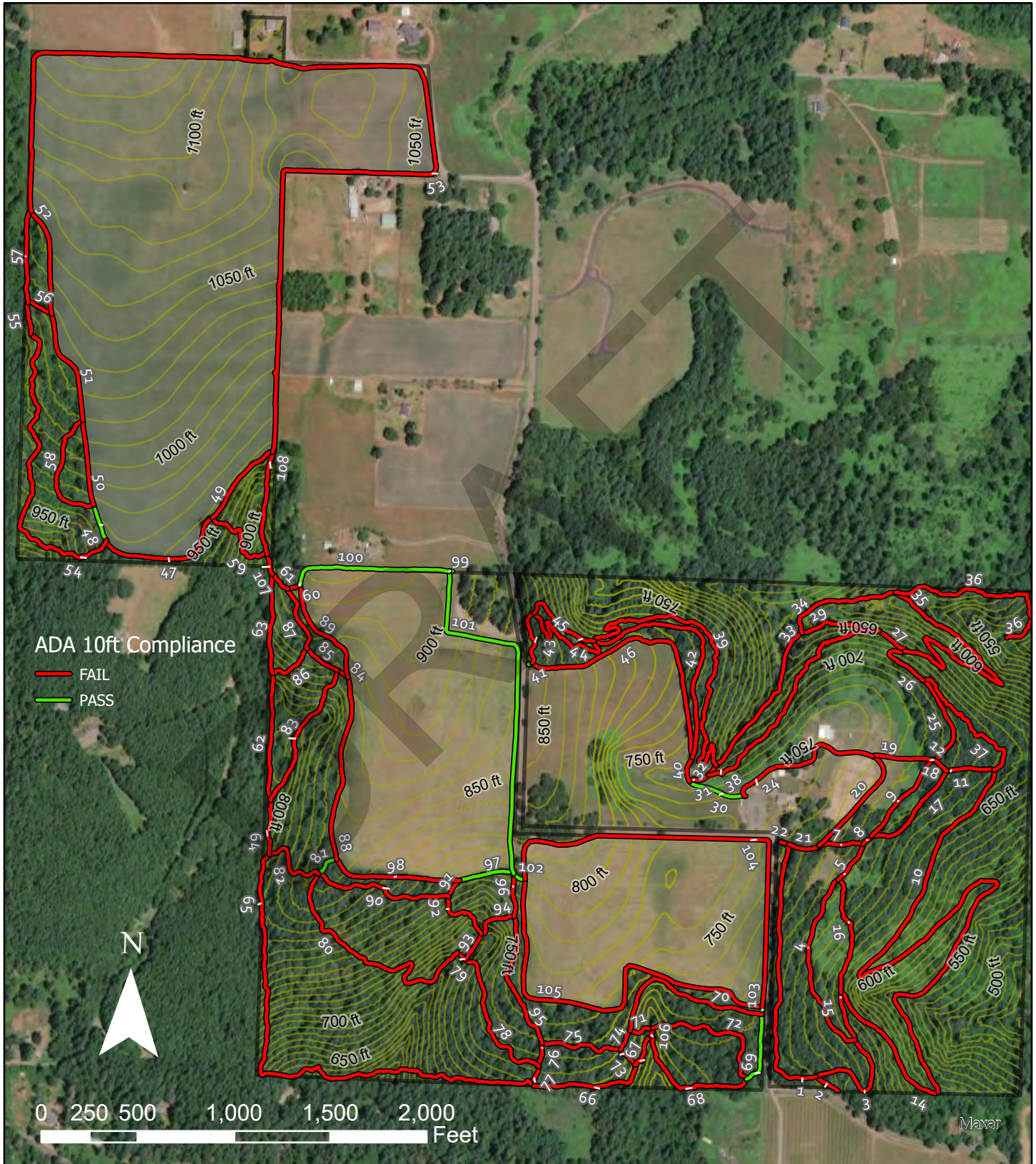0 250 500 1,000 1,500 2,000
Feet

By Quentin Comus and Islam Elwefati

Updated 12/6/2022

Bob and Crystal Rilee Park Trails

Americans with Disabilities Act (ADA) Compliance - 10ft Grade Recreation Trail Rule

ADA 10ft Compliance
— FAIL
— PASS

N

0   250 500   1,000   1,500   2,000
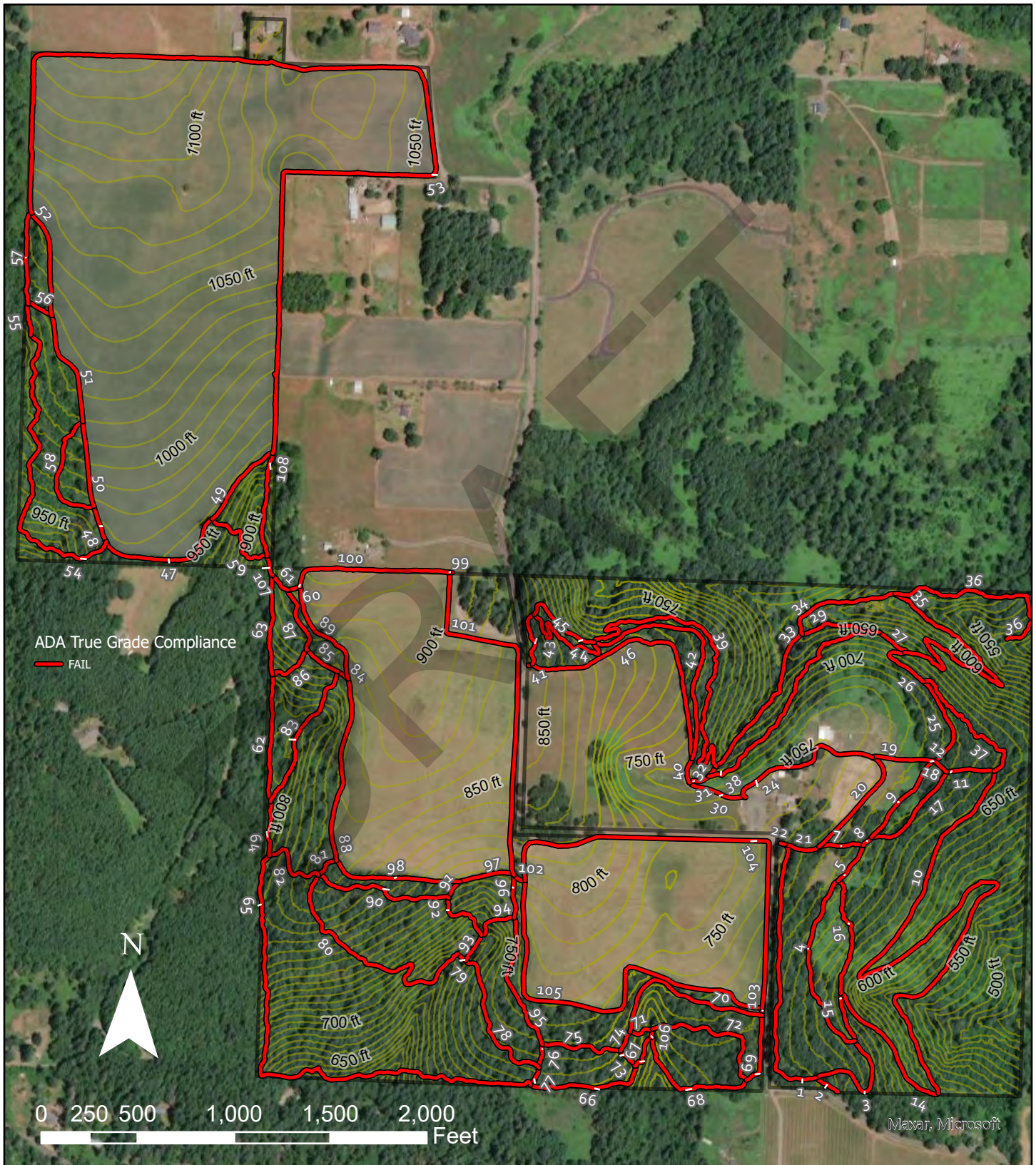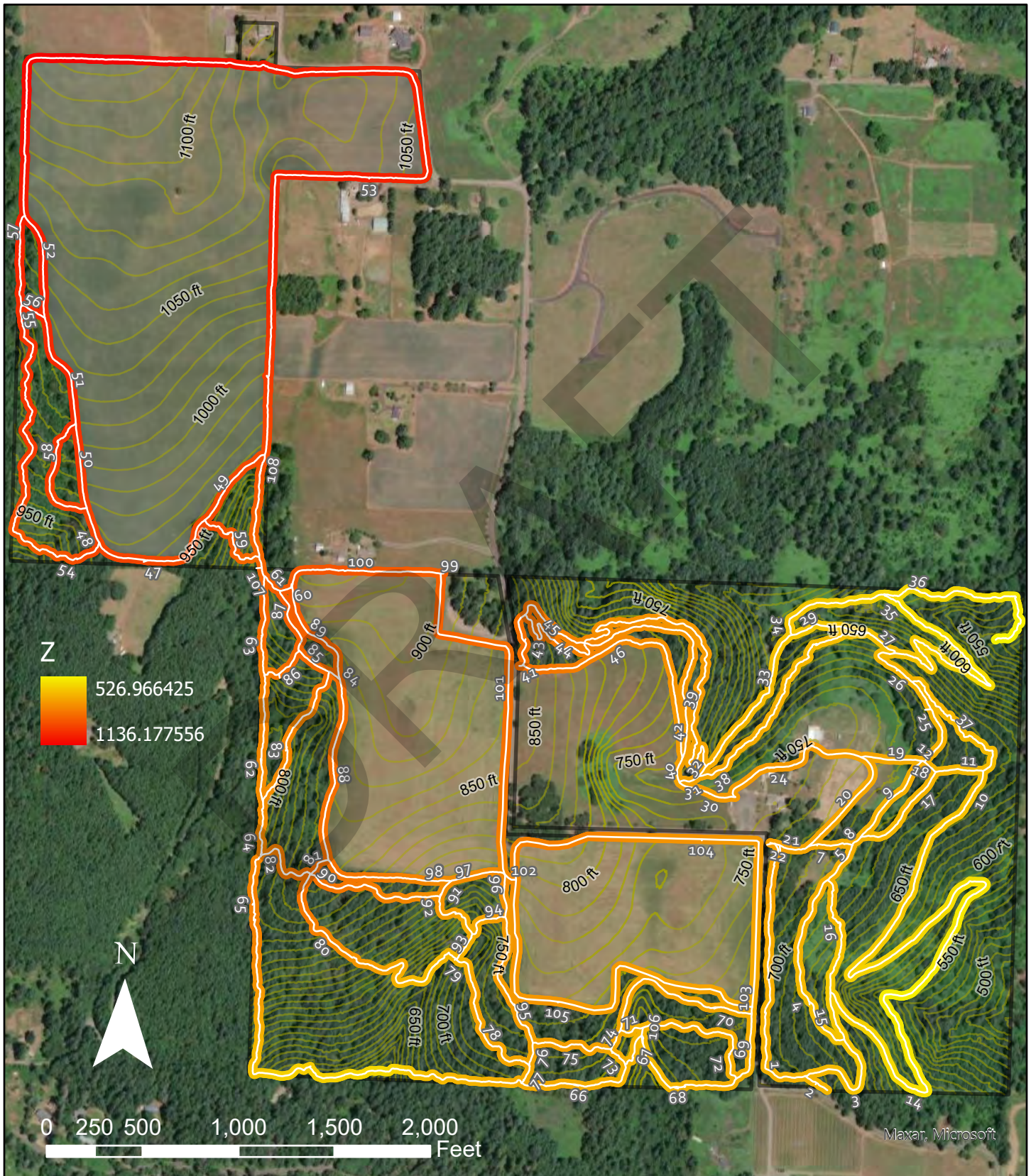Feet

Maxar

By Quentin Comus and Islam Elwefati

Updated 12/6/2022

Bob and Crystal Rilee Park Trails

Americans with Disabilities Act (ADA) Compliance - True Grade Recreation Trail Rule

ADA True Grade Compliance
— FAIL

N

0   250 500   1,000   1,500   2,000
Feet

Maxar, Microsoft

By Quentin Comus and Islam Elwefati

Bob and Crystal Rilee Park Trails

5-foot Interval Trail Elevation (with Trail Numbers)

Z

526.966425
1136.177556

N

Maxar, Microsoft

0 250 500 1,000 1,500 2,000
Feet

By Quentin Comus and Islam Elwefati

Updated 12/5/2022

Bob and Crystal Rilee Park Trails

Tread Width (with Trail Numbers)

TreadWidth

8.0
130

N

0   250 500   1,000   1,500   2,000
Feet

By Quentin Comus and Islam Elwefati

Updated 12/5/2022
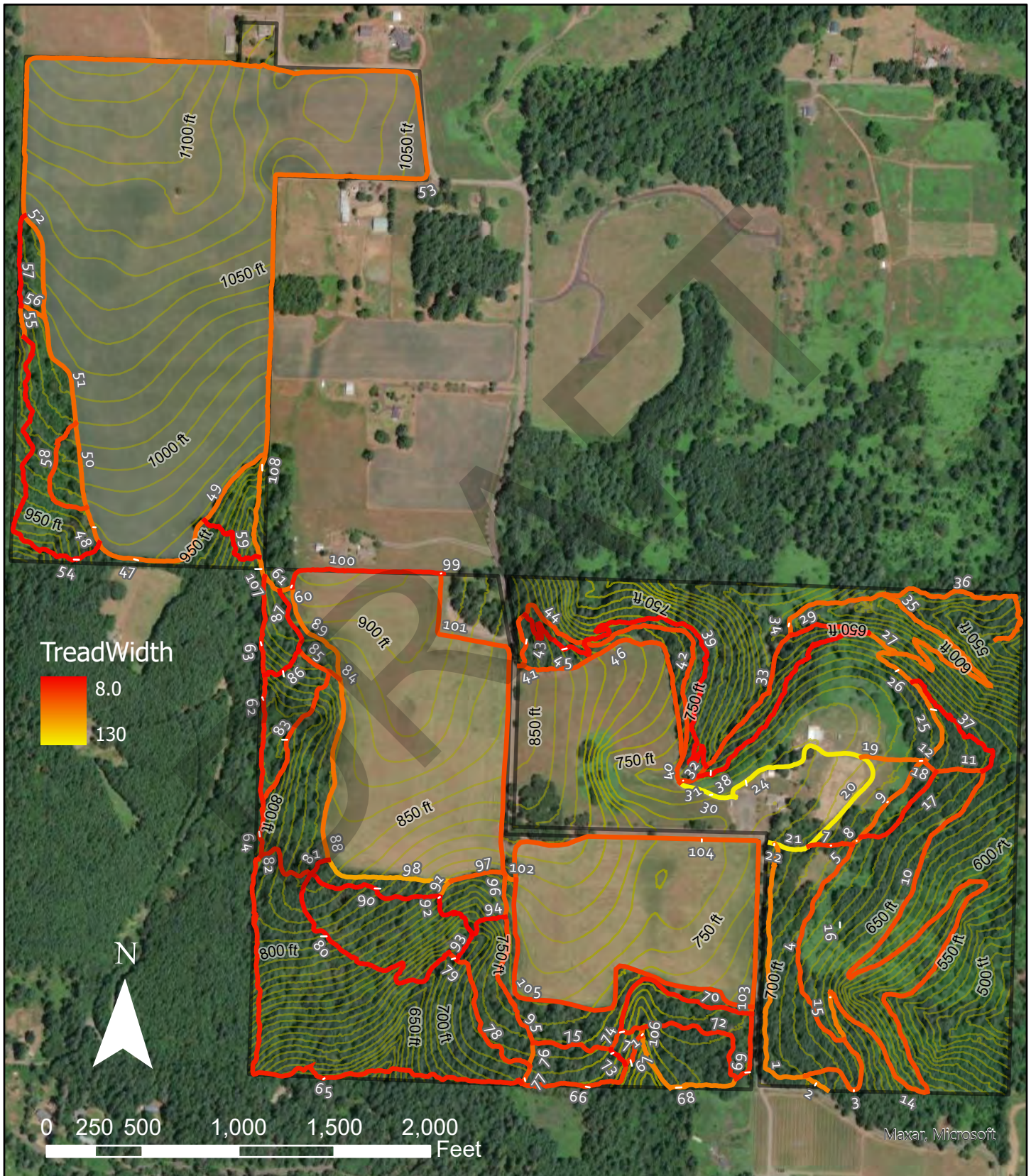
Bob and Crystal Rilee Park Trails

Clearing Height (with Trail Numbers)

Clearing Height
- 36
- 37 - 84
- 85 - 96
- 97 - 107
- 108 - 144
- N/A

N

0   250 500   1,000   1,500   2,000
Feet

Maxar, Microsoft

By Quentin Comus and Islam Elwefati

Updated 12/5/2022
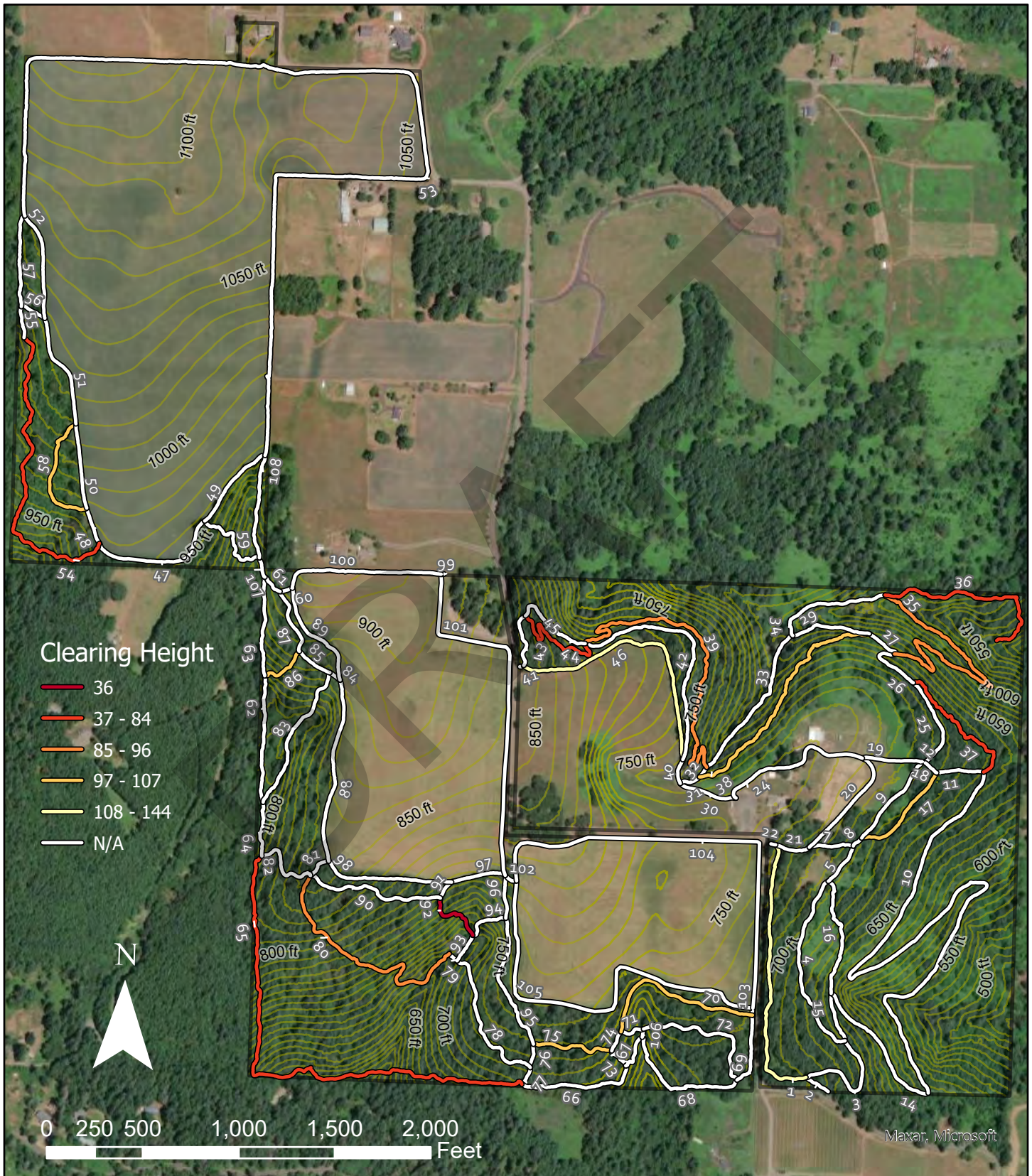
Bob and Crystal Rilee Park Trails

Tread Surface (with Trail Numbers)

Tread Surface
- Dirt
- Grass
- Gravel
- Natural Surface

N

0   250   500   1,000   1,500   2,000
Feet

Maxar, Microsoft

By Quentin Comus and Islam Elwefati