

# Oahu Forestry Road and Trail Universal Trail Assessment Project

## Scope of Services

July 28, 2021

### Summary of requested services

1. Implement the Universal Trail Assessment Process (UTAP) on select Na Ala Hele program trails on Oahu, Maui, and Kauai islands.
2. Use collected UTAP data to design, create trail profile signage for placement at trailheads. Purchase of signs will be included within the contract. Placement and installation will be done by state forestry staff.
3. Provide sub-three-meter accuracy GPS ArcView shape files for every trail or road surveyed.

### Objective:

Once completed, this trail assessment process and trail head sign project will provide trail users with useful information about the trail conditions like distance, grade, slope and elevation gain etc. Whereby, they can determine for themselves if the trail is suitable to meet their abilities.

### Required Training and Experience:

For this solicitation vendors must be able to provide proof of formal training and experience in the form of certificates, letters or examples of completed projects in the following areas:

- Experience in outdoor hiking and 4-wheel drive
- Formal Universal Trail Assessment Process (UTAP) training
  - Including the use of UTAP equipment
  - Including some knowledge of the UTAP software
- Experience in trail mapping using high accuracy GPS.
- Experience in using measuring devices like wheel, tape, compass, clinometer and/or smartsticks.

### Timeline:

The Contract Start and End date is posted on within the HiPro Solicitation General Information.

Contract Start Date

Contract End Date/Delivery Date

### **Scope of Service and Specifications for Trails:**

Work will require using UTAP equipment or equivalent and high accuracy GPS to survey and carry out the UTAP on all listed trails on Oahu, Kauai and Maui. Each island will be listed as a separate line item within the solicitation. Work will require hiking long distances with a lot of equipment and needed supplies. Work will require four-wheel drive experience for some locations.

#### **1. Field Service Specifications:**

- a. Read and sign UTAP equipment barrowing agreement
- b. Calibrate and/or ground truth all issued equipment
- c. Hike each listed trail within the selected line items with issued UTAP equipment or equivalent. (Line items and selected trails listed below)
- d. Use issued UTAP equipment or equivalent to record and collect data for each trail that will be used to determine trail profile details as list below.
  - i. Trail identification
  - ii. Length of trail or trail segment - GPS Track file or equivalent
  - iii. Surface Type
  - iv. Typical and minimum tread with
  - v. Typical and maximum running slope
  - vi. Typical and maximum cross slope

#### **2. Office Service Specifications:**

- a. Post process all collected data using UTAP soft wear or equivalent to create a trail "profile" for each trail and a "basic" sign as required (See Attachments A & B).
- b. Design a trail sign template to be approved by DOFAW staff.
- c. Use completed trail profile data to populate approved sign template.
- d. Provide completed GPS ArcView files to DOFAW staff.
- e. All signs must provide the following information both visually as a profile graph line and in text format (See Attachments A & B).
  - i. Trail identification
  - ii. Length of trail or trail segment - GPS Track file or equivalent
  - iii. Surface Type
  - iv. Typical and minimum tread with
  - v. Typical and maximum running slope
  - vi. Typical and maximum cross slope

- f. All signs must be made by professional sign maker and must meet the following specifications (See sample Attachment A and B):
  - i. Must meet MUTCD specifications and requirements
  - ii. Minimum 0.063" aluminum material thickness
  - iii. Rounded corners
  - iv. 3M-1160 laminated

**Line Item #1. Oahu Trails and Roads:**

**Total Trail Distance to be Surveyed: 86.28 miles of Oahu Na Ala Hele trails.  
See Na Ala Hele Website for directions: [hawaiitrail.hawaii.gov](http://hawaiitrail.hawaii.gov)**

	<b>Oahu Trails</b>	<b>Miles</b>	<b>Profile signs</b>	<b>Basic signs</b>
<b>1</b>	<b>Tantalus Arboretum</b>	<b>0.25</b>	<b>1</b>	
<b>2</b>	<b>Kanealole</b>	<b>0.7</b>	<b>1</b>	<b>1</b>
<b>3</b>	<b>Maunalaha</b>	<b>0.7</b>	<b>1</b>	<b>1</b>
<b>4</b>	<b>Nahuina</b>	<b>0.75</b>	<b>1</b>	<b>1</b>
<b>5</b>	<b>Makiki Valley</b>	<b>1.1</b>	<b>2</b>	<b>2</b>
<b>6</b>	<b>Ualakaa</b>	<b>0.53</b>	<b>1</b>	<b>1</b>
<b>7</b>	<b>Moleka</b>	<b>0.75</b>	<b>1</b>	<b>1</b>
<b>8</b>	<b>Manoa Cliff</b>	<b>1.9</b>	<b>1</b>	<b>3</b>
<b>9</b>	<b>Puu Ohia</b>	<b>0.75</b>	<b>1</b>	<b>3</b>
<b>10</b>	<b>Pauoa Flats</b>	<b>0.75</b>	<b>1</b>	<b>3</b>
<b>11</b>	<b>Nuuanu</b>	<b>1.5</b>	<b>1</b>	<b>1</b>
<b>12</b>	<b>Judd</b>	<b>0.75</b>	<b>1</b>	
<b>13</b>	<b>Aihualama</b>	<b>1.3</b>	<b>1</b>	<b>1</b>
<b>14</b>	<b>Manoa Falls</b>	<b>0.8</b>	<b>1</b>	
<b>15</b>	<b>Kalawahine</b>	<b>1.5</b>	<b>1</b>	<b>2</b>
<b>16</b>	<b>Kolowalu</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>17</b>	<b>Waahila</b>	<b>2.4</b>	<b>1</b>	<b>1</b>
<b>18</b>	<b>Puu Pia</b>	<b>0.75</b>	<b>1</b>	<b>1</b>
<b>19</b>	<b>Kuliouou Valley</b>	<b>0.6</b>	<b>1</b>	
<b>20</b>	<b>Kuliouou Ridge</b>	<b>2.5</b>	<b>1</b>	
<b>21</b>	<b>Manana</b>	<b>6</b>	<b>1</b>	
<b>22</b>	<b>Waimano</b>	<b>7.2</b>	<b>1</b>	<b>1</b>
<b>23</b>	<b>Lower Waimano</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>24</b>	<b>Kuaokala</b>	<b>2.5</b>	<b>2</b>	

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25	Kealia	2.3	2	
26	Kaunala	2.5	1	
27	Hauula Loop	2.5	1	
28	Maakua Ridge	2.5	1	
29	Wiliwilinui	3	1	
30	Hawaiiloa Ridge	2	1	
31	Maunawili	0.1	1	
32	Maunawili Falls Connector	0.5	1	
33	Maunawili Ditch	2.75	2	
34	Poamoho	3	1	
35	Kulana'ahane	2.75	1	
36	Maunawili - Waimanalo Rd.	1	1	1
37	Poamoho Hele Loa Rd.	6	1	
38	Wiliwilinui Road	1.5	1	
39	Mokuleia Firebreak Rd.	3.5	1	
40	Kuaokala Access Rd.	7.3	2	
41	Kealia Upper Access Rd	1.1	2	
42	Kamananui Valley Rd.	4	1	
	<b>TOTAL</b>	<b>86.28</b>	<b>48</b>	<b>26</b>

**Line Item #2. Maui Trails:**

**Total Trail Distance to be Surveyed: 5.3 miles of Maui Na Ala Hele trails.  
See Na Ala Hele Website for directions: [hawaiitrail.hawaii.gov](http://hawaiitrail.hawaii.gov)**

1. Waihe`e Ridge Trail - 2.5 Miles (Profile: 1ea. - Basic 1ea.)
2. Waikamoi Ridge Trail – 0.8 Miles (Profile: 1ea. - Basic 1ea.)
3. Hoapili Trail – 2.0 Miles (Profile: 1ea. - Basic 1ea.)

**Line Item #3. Kauai Trails:**

**Total Trail Distance to be Surveyed: 28.3 miles of Kauai Na Ala Hele trails.  
See Na Ala Hele Website for directions: [hawaiitrail.hawaii.gov](http://hawaiitrail.hawaii.gov)**

4. Nounou East - 1.8 Miles (Profile: 1ea. - Basic 1ea.)
5. Nounou West - 1.8 Miles (Profile: 1ea. - Basic 1ea.)
6. Kuamo`o - 2.0 Miles (Profile: 1ea. - Basic 1ea.)
7. Kuilau - 2.0 Miles (Profile: 1ea. - Basic 1ea.)
8. Moalepe - 2.3 Miles (Profile: 1ea. - Basic 1ea.)
9. Nu`alolo - 3.8 Miles (Profile: 1ea. - Basic 1ea.)
10. Nu`alolo Cliff - 2.0 Miles (Profile: 1ea. - Basic 1ea.)
11. Awa`awapuhi - 3.3 Miles (Profile: 1ea. - Basic 1ea.)
12. Pihea - 3.5 Miles (Profile: 1ea. - Basic 1ea.)
13. Alaka`I Swamp - 3.5 Miles (Profile: 1ea. - Basic 1ea.)
14. Kukui 2.5 Miles (Profile: 1ea. - Basic 1ea.)

**Additional Project Requirements for Trails and Roads:**

- **Vendor is responsible for providing a mandatory progress report on the morning of the 1<sup>st</sup> weekday of every month during the project. Report will include past month's accomplishments including trail names, upcoming month's objectives also including trail names.**
- **All work activity can take place seven days a week sunup to sundown.**
- **Vendor will work with private landowners and DOFAW to gain vehicular access by key or combination. Vendor will not use any gate restricted access for personal use or recreation or give any issued keys or combinations to any member of the public. If this happens it will result in instant termination of contract. Each key borrowed from DOFAW will have a refundable deposit of \$50 upon return key(s).**
- **Vendor is responsible for providing own transportation to and from all work sites.**
- **Vendor must be compliant with Hawaii Compliance Express to be paid**

- **Vendor is responsible for all First Aid and emergency evacuation plans.**
- **Failure to meet the requirements of the contract will result in termination of the contract and possible pay restrictions.**

**Options to consider:**

- **Finding additional support for the completion of the services.**
- **Apply for camping permits to reduce house cost and travel time.**

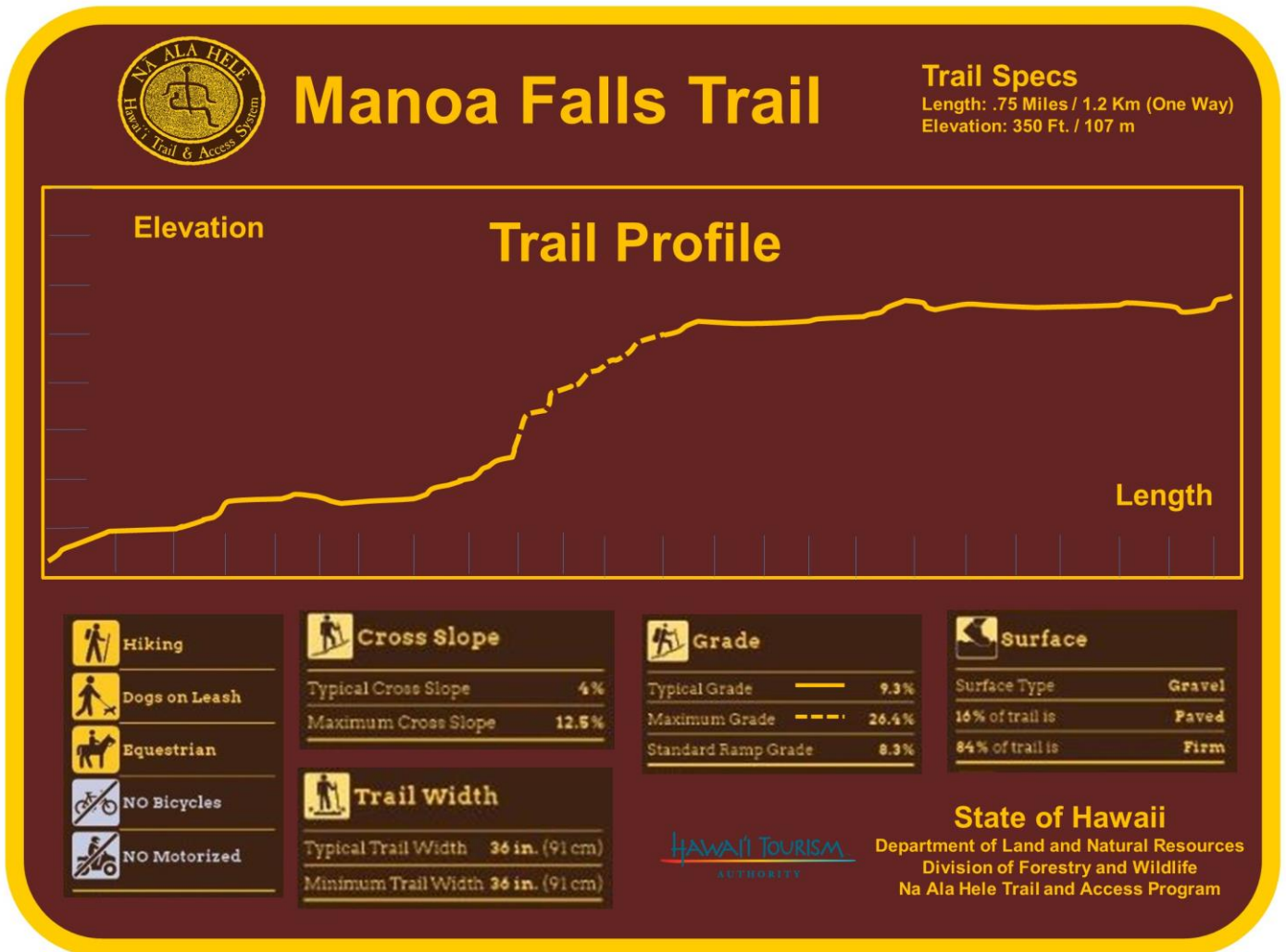
**Oahu Division of Forestry and Wildlife Responsibilities**

- **Payment will be processed upon completion of the above scope of service.**
- **Payment may take 2 to 4 or even 6 weeks**

**Solicitation Requirements:**

- **A mandatory Zoom meeting will be provided to go over the SOW and for questions/answers. Meeting link will be provided to interested registered HlePRO vendors only.**

**Attachment A**



**Attachment B**



### Trail Specs

Switchback trail to the valley floor

<b>Length</b>	<b>0.4 mi. (0.6 km)</b>
<b>Elevation Gain</b>	<b>75 ft. (23 m)</b>
<b>Elevation Loss</b>	<b>110 ft. (34 m)</b>

 **Hiking**

 **Dogs on Leash**

 **Equestrian**

 **NO Bicycles**

 **NO Motorized**

 **Grade**

<b>Typical Grade</b>	<b>9.3%</b>
<b>Maximum Grade</b>	<b>26.4%</b>
<b>Standard Ramp Grade</b>	<b>8.3%</b>

 **Cross Slope**

<b>Typical Cross Slope</b>	<b>4%</b>
<b>Maximum Cross Slope</b>	<b>12.5%</b>

 **Trail Width**

<b>Typical Trail Width</b>	<b>36 in. (91 cm)</b>
<b>Minimum Trail Width</b>	<b>36 in. (91 cm)</b>

 **Surface**

<b>Surface Type</b>	<b>Gravel</b>
<b>16% of trail is</b>	<b>Paved</b>
<b>84% of trail is</b>	<b>Firm</b>

 **Obstructions**

<b>Rock</b>	<b>3 in. (8 cm)</b>
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