

Memorandum of Agreement (MOA) Stipulation 15 – Terrain Model Meeting  
Queen Ka’ahumanu Highway Phase 2  
Kailua-Kona, Hawai’i

Tuesday, February 21, 2017  
West Hawai’i Civic Center  
74-5044 Ane Keohokalole Highway, Kailua-Kona, HI 96740

10:00 am – 12:30 pm

Attendees

**Hawai’i Department of Transportation (HDOT)**

Sterling Chow, P.E., Assistant District Engineer  
Hawai’i District  
Natasha Soriano, P.E., Project Manager

**Native Hawaiian Organizations (NHOs)**

Hannah Kihalani Springer  
Cynthia Nazara

**Project Consultant, R. M. Towill Corp. (RMTC)**

Jason Tateishi, P.E., Project Manager  
Stacy Armstrong, P.E., Project Manager  
Brian Takeda, Planning Project Coordinator

**National Park Service (NPS)**

Rae Godden  
Jeff Zimpfer  
Jon Jokiel

Agenda

1. Review of major meeting points: February 10, 2017
  - ACHP request for special meeting to review and report on status of MOA Stipulations
  - Request for map mark-ups depicting features to be added to the Terrain Model
  - Draft Meeting Notes of February 10, 2017
2. Construction of Terrain Model and Digital Model
3. Review of area of inclusion: Lands of Kekaha
4. Review and confirm features for inclusion
5. Tasks prior to next meeting and other business

Handouts – Copy of Stipulation 15, Terrain Model (previously distributed)

Meeting Summary

1. Sterling Chow, HDOT, indicated the HDOT will be proceeding with the recommendation of Mary Ann Naber, Advisory Council on Historic Preservation (ACHP), to present an update on the status of the MOA Stipulations. The planned meeting will be announced at a later date but will use Herb Lee and Dawn Chang as community facilitators to assist with the process.

2. It was noted that at the last meeting of February 10<sup>th</sup> that the group indicated its desire to use a GIS based model to serve as the basis for the terrain model. Stacy Armstrong, RMTC, pointed out that a workable solution might be to show the GIS model using Google Earth. Otherwise there would be a problem of individual group members not having either the software or the necessary computer hardware and training needed to manipulate and properly view the image.
3. Hannah Springer provided a marked up version of the map distributed at the previous meeting and added comments:
  - Boundaries associated with the different landscapes are shown based on what we know from young lava flows. Vegetation types can be added to the markup showing the higher elevation mountain lands with open, alpine scrubland, and other vegetation types and uses. The group should indicate what it wants.
  - The color palette used can be anything the group feels is appropriate. The colors can range from reds/browns to greens, showing drier, more arid terrain to wetter, greener terrain that depicts how the landforms are used.
  - The vegetation on the landforms depict how the land was used, thereby representing the cultural aspects that formed the boundaries of ahupua'a.
  - A number of other kinds of information can be depicted depending on what is of interest. Some of the trails can show how the Hawaiians used them to collect water, or obtain important materials, or to provide access to other points of departure such as Kawaihae Harbor. Many stories can be told about the land through generations and over time.
  - Geographically, need to show the mauka of the ahupua'a and the makai lands as historically uninterrupted.
  - There are a number of corrections to make to place names. Some errors are of historical note as they may have occurred going back to when maps were reproduced by the use of linen overlaid and traced from the original map.

A summary of the effort provided by Hannah on the maps included: corrections to place names; information on locations considered to be important; and discussion on features that should be included on the terrain model.

4. Hannah added that it may be possible to show the locations of old fishponds that have since been covered by lava flows. She also marked some locations of trails that would need to be verified by others to help properly identify them. However, the priority should be to get the place names correct.
5. Rae Godden, NPS, provided copies of a guide depicting the correct use of Hawaiian language diacriticals to help with proper spelling on the terrain model.

6. The construction and storage of the terrain model was next discussed. Cynthia Nazara noted that the map should not be cut into pieces and that it should be stored in a safe location, such as at a University of Hawai'i facility. This would allow the model to reside at a safe location and then use the digital graphic for presentation purposes.
7. A recommendation was made that Leina'ala from the Kukio Interpretive Center should also be contacted to help review the work that is underway.
8. Rae added that due to space limitations that it is impractical for the terrain model to be placed at Honokohau. Another comment was that the group consider Palama Nui at the UH.
9. Stacy next provided an overview and demonstration of a draft terrain model using google earth on a laptop PC. The model shown can be updated as new information comes in from the group and distributed to indicate what could be done. New information in the form of layers can be added, but with increasing data there would be slowing down of some of the computers. Stacy asked for input about the model image as shown on-screen. One comment recognized that while Makani Hou could not be present at this meeting that there were at least members of the Kona Hawaiian Civic Club present.
10. Sterling and Brian helped to summarize the types of information collected at today's meeting:
  - Place names must be correctly spelled
  - Hawaiian trails have a hierarchy: Trails of the kingdom followed by regional trails
  - Ahupua'a boundaries should include Ali'i, Crown, and government land
  - Lava flows should be depicted (younger)
  - Vegetation and xenolith zones should be depicted
  - Other - Land uses across the terrain includes:
    - Fishponds
    - Agriculture
    - Forest lands
    - Sheep/goat ranching
    - Kukui groves
    - Caves used for the storage and collection of water
11. Summary of Tasks
  - Collect data provided by the group and revise the digital terrain model to include the information. When the map is ready, submit to the participants.
  - The final map of the current effort will be posted to record the group's current effort.
  - The input of Makani Hou is requested at the next Terrain Model meeting.
12. Adjournment: The meeting concluded at about 12:15 pm.