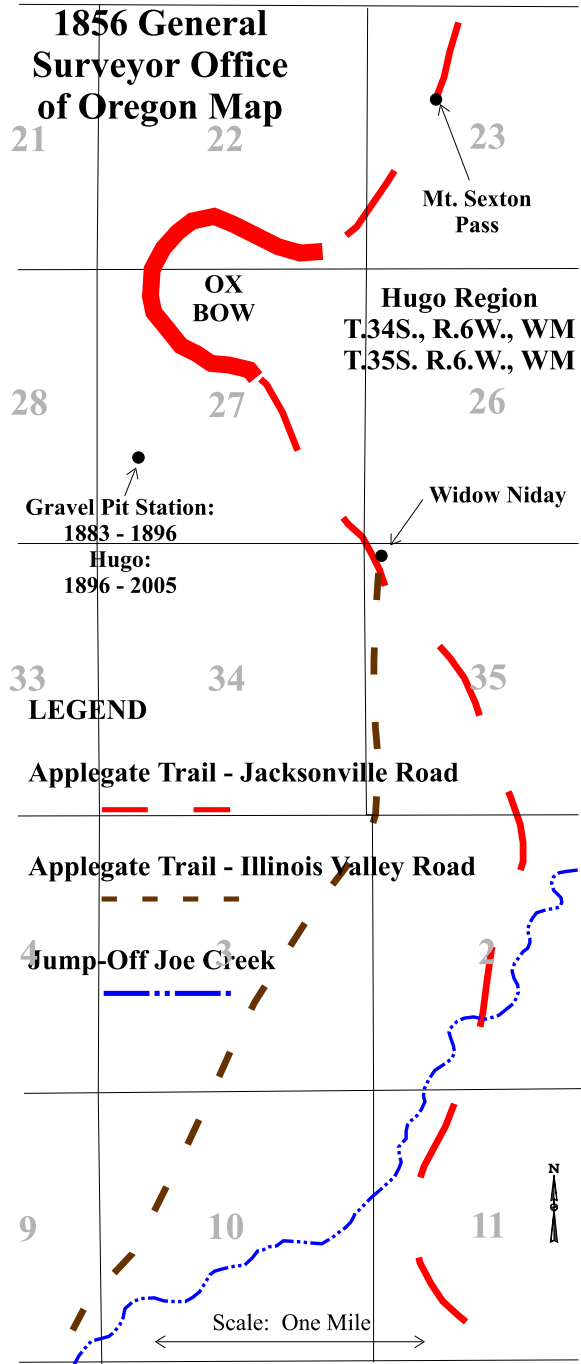


STANDARDS:

Emigrant Trail Inventories and Decisions



by

**Karen Rose and Mike Walker,
Co-Project Leaders
Hugo Emigrant Trails Committee (HETC)
Hugo Neighborhood Association & Historical
Society (HNA&HS)**

December 8, 2013

Standards: Emigrant Trail Inventories and Decisions

INTRODUCTION

- I. FOCUS ON GOVERNMENT SURVEYS AS TRAIL EVIDENCE
- II. OCTA MAPPING EMIGRANT TRAILS (MET) MANUAL
 - A. Introduction
 - B. Primary Research Methods
 - 1. Overview
 - 2. General Principles Governing Trail Location & Verification
 - 3. Cardinal Rules of Trail Verification
 - a) Coherence Rule: Linear Uniformity
 - b) Corroborative Rule: Confirming Evidence
 - c) Collateral Rule: Physical/Topo Evidence
 - d) Correlation Rule: Overall Agreement
 - 4. Ranking the Reliability of Evidence Used to Verify Trial Location
 - 5. Guidelines For Locating Wagon Trails
 - 6. Conclusion
 - C. Emigrant Trail Classification Categories.
 - 1. Classification Categories
 - a) Class 1: Unaltered Trail
 - b) Class 2: Used Trail
 - c) Class 3: Verified Trail
 - d) Class 4: Altered Trail
 - d) Class 5: Approximate Trail
 - 2. Additional Guidelines for Classifying Trails
 - 3. Trail Terminology
- III. SUMMARY
- IV. OCTA's MET MANUAL RESOURCES

APPENDICES

- Appendix A. HETC's Web Research Publications on Applegate Trail
- Appendix B. General Principles Governing Trail Location & Verification
- Appendix C. Cardinal Rules of Trail Verification
- Appendix D. Ranking the Reliability of Evidence Used to Verify Trial Location
- Appendix E. Guidelines For Locating Wagon Trails
- Appendix F. MET Manual Conclusion
- Appendix G. Emigrant Trail Classification Categories

Standards: Emigrant Trail Inventories and Decisions

Chapter I, Introduction, and Chapter III, Summary, are the values and beliefs of the Hugo Emigrant Trails Committee (HETC), Hugo Neighborhood Association & Historical Society (HNA&HS) as summarized by its Co-Project Leaders. Chapter II. “OCTA Mapping Emigrant Trails Manual” is a summary of the highlights of the MET Manual as observed by the Co-Project Leaders, and Chapter IV, OCTA’s MET Manual Resources are online MET resources and OCTA contacts. The trail researcher and mapper should always check the entire text of the MET Manual when implementing its methods.

INTRODUCTION

The HETC, HuNAHS (*Hugo Neighborhood*), has been working on researching, mapping, and documenting the 1846 - 1883 *Trail* in northern Josephine County, Oregon for over one and one-half decades. The HETC was formally organized by the HuNAHS Board in 2005 (HETC. May 14, 2005. *Mapping Action Plan For Applegate Trail Program*. Hugo, OR). Per the 2005 policy of the *Hugo Neighborhood* and the HETC, the standards for all emigrant trail inventories and decisions would be documented using the standards of OCTA’s *Mapping Emigrant Trails (MET) Manual*. This policy was continued March 2012 when the Hugo Applegate Trail Marking & Mapping Project Agreement was finalized and signed by its partners: Northwest Chapter, Oregon-California Trails Association (NWOCTA); *Hugo Neighborhood*; and the Josephine County Historical Society (JCHS). Over the years, the work of the HETC’s two sub-committees has been just outstanding researching and installing wooden *Trail* survey markers, and later OCTA carsonite markers. Both the Diaries, Journals, and Reminiscences Sub-Committee, and the GLO Field Review SubCommittee (GLO SubCommittee) are to be commended, with their work complementing each other.

I. FOCUS ON GOVERNMENT SURVEYS AS TRAIL EVIDENCE

A foundation principal of the HETC, HNA&HS, carrying out its mission in the winter-wet, mountainous terrain of Southwestern Oregon is to research and map emigrant trails through the use of the methods and procedures identified in the Oregon-California Trails Association (OCTA) Mapping Emigrant Trails (MET) Manual.

Trail Mapping Committee, Office of National Trails Preservation & Oregon-California Trails Association.
July 2002, 4th edition. *Mapping Emigrant Trails MET Manual*. Independence, MO.

The MET Manual is OCTA’s program for locating, verifying, classifying and plotting emigrant trails based on standard research methods and procedures. In 2005 the MET approach was evaluated by the HNA&HS and it found a sound systematic repeatable system of trail classification. Especially refreshingly was that the MET’s methods and products could be quality controlled through application of some elements of the scientific method. In 2005 the MET Manual was adopted by the HNA&HS when it formally created the HETC through its Mapping Action Plan.

The HETC is made up of two sub-committees: 1. Diaries, Journals & Reminiscences Sub-committee, and 2. the GLO Field Survey Sub-committee. Both sub-committees have been busy and productive (Appendix A).

A key idea is the GLO SubCommittee's first tier of focus for locating Applegate Trail (*Trail*) sites. This focus is through the use of accurate historical and modern government survey notes (i.e., the 1850s GLO survey notes and maps, 1850s donation land claim (DLC) survey notes and maps, and modern local Josephine County surveys and maps). With the relative scarcity of detailed diaries and/or journals (Corroborative Rule) for the Hugo region, the HNA&HS would not have formed the HETC in 2005 without the knowledge that these surveys were out there to be discovered, especially the GLO surveys. Significantly, the importance of the 1850s GLO surveys to the GLO SubCommittee's mission is reflected in its name, "General Land Office Field Survey Subcommittee."

The crucial importance of the government surveys is further enhanced because after 150 years the *Trail* in Southwestern Oregon is usually buried beneath 6 - 12 inches of soil and debris, and there is little physical and vegetation evidence (Collateral Rule) remaining of the *Trail*. Members of the GLO SubCommittee joke that in the field what is usually seen and heard is the participant's imagination and opinion. Ruts are gone and traces are few, but a verified surveyed *Trail* site can make sense of the local terrain where there are several skid roads. Faint traces aligned along the recorded course of the *Trail* are clarified to their significance beyond a normally appearing natural swale. On occasion the mystery of a cairn could appear at the end of a GLO bearing and distance track. These verified surveyed *Trail* sites greatly facilitate the search for the *Trail* by showing the researcher where to look for reliable *Trail* traces. They solve the mystery of several traces, logging skid roads, or evolved roads in the same vicinity by determining and verifying which of the traces or evolved roads are related to historic emigrant wagon use.

Government surveys are also of value in hilly or mountainous terrain that is forested and has a history of logging. The MET Manual is again helpful by providing guidelines for the location of wagon trails. For example, see the following.

1. In hilly or mountainous terrain, emigrant wagons generally followed ridges or higher elevations rather than gullies, ravines, or canyons.
2. Trails traversing along the sides of slopes usually will not be emigrant wagon trails. Exceptions might be where there was either no alternative to a steep slope or the slope angle was not steep enough to make wagons unstable.
3. Generally, wagons ascended and descended on the spine of a ridge rather than up or down gullies.

Of significance is the focus on the specific 1850s GLO and DLC surveyed sites (i.e., first tier of focus for locating *Trail* sites), not on evidence along the GLO mapped route of the trail between surveyed sites at section lines. The HETC has historically considered the "average" one mile

distance between section lines of GLO surveys as professional artwork identifying the general location of the *Trail*. In the future the HETC expects to spend more time on these big ugly unknown grey areas. Instead of being anomalies for it, the following vegetation, topography, and artifact examples will become more common place: 1. road trace and vegetation differential NW of Soldier Creek JA-2A; GLO bearing and distance method located Harris cairn; 3. ox yoke chain artifact found at OR-JA-00-35-06-2 Silvestri property; 4. *Trail* swale of a parallel set of ruts or “Two-track” north east of Dickerson’s Corner 2 IV-7A, along the NE and SW course on both sides of Dickerson’s Corner 1 IV-6A; and 5. evolved *Trail* at original GLO route corroborated by later government surveys - Applegate Trail North Sexton Pass *Trail* segment.

Conflicting evidence for some *Trail* sites make it difficult for the HETC to rank the reliability of different types of evidence used to verify the *Trail* locations, and it tries to avoid jumping to quick conclusions. In the best of situations, the *Trail* researcher examines all the relevant written, cartographic, physical, and artifact evidence, and finds them mutually supporting. What does the researcher do when different kinds of evidence conflict? How does one determine the relative reliability of different types of evidence (MET Manual pages 4 - 12)? The eight MET identified types of evidence used to verify trail location with their rank order reflecting the relative reliability of available evidence is helpful (MET Manual pages 5 - 8).

In summary, the Hugo Co-Project Leaders, HETC, HNA&HS, are enthusiastic supporters of the MET even though it does not solve all the situations of conflicting evidence. The MET Manual reminds us that even OCTA’s most experienced trail trackers encounter puzzling anomalies leading to unanswerable questions. However, team work such as the Hugo GLO SubCommittee’s efforts are hard to compete with in numbers, experience, passion, and the dedication to document their application of MET methods. We move forward when we leave a documented history trail for those trail researchers that follow.

II. OCTA MAPPING EMIGRANT TRAILS (MET) MANUAL

A. Introduction (page 3, MET)

The OCTA has several ongoing programs dedicated to researching and preserving emigrant trails. Over the years, many of the overland trails in the Trans-Mississippi West have been mapped, but never in a systematic way. There have been advances in computer technology, and global positioning system (GPS) technology has become indispensable.

The goal of the MET program is to produce the **definitive** mapping of the overland emigrant trails based on the research methods, field verification techniques, and classification system advanced in the MET Manual.

MET Manual Conclusion. Parts of our priceless national heritage are being threatened or lost every year simply because of the lack of authoritative knowledge about trail locations. Consequently, it is important that OCTA map the trails as quickly as possible, consistent with historical accuracy, and make this information available to public agencies and private landowners for purposes of trail preservation.

Therefore, the sooner the MET program is completed, the sooner our **overland-trails heritage will be protected and preserved.**

B. Primary Research Methods (pages 4 - 12, MET)

1. Overview (page 4) Because the accuracy and reliability of the MET program rests on the quality of research, it is important to emphasize the methods used to locate and verify emigrant wagon trails. Documentary evidence (trail literature of all types) is the main historical resource available to the trail researcher, therefore, MET participants must have a basic familiarity with the literature of the trails. Emigrant diaries and journals – eyewitness accounts of trails – usually provide the most reliable documentary evidence for trail research and field verification.

The following discussion focuses on the primary methods used in documentary research and investigative fieldwork. These methods are designed to impart order and discipline into the use of evidence in locating and verifying emigrant trail segments.

2. General Principles Governing Trail Location & Verification (page 4, MET) All too often the exact location of an emigrant trail segment cannot be verified with absolute certainty. In most situations, however, the trail researcher can strive for a higher degree of probability by utilizing all the available evidence and following correct procedures. The trail historian can only measure the unknown by what is known through analogy (Appendix B).

3. Cardinal Rules of Trail Verification (page 5, MET) For the location of an emigrant trail segment to be considered as verified, it must conform to the following “Four Cardinal Rules.” Where conditions exist such that any of these four rules do not apply, the probability level is reduced accordingly. Essentially, these “Four Cardinal Rules” becomes a standard for assessing the degree of probability that the researcher/mapper has accurately located an emigrant trail segment (Appendix C).

- Coherence Rule: Linear Uniformity
- Corroborative Rule: Confirming [Written] Evidence
- Collateral Rule: [Confirming] Physical/Topo Evidence
- Correlation Rule: Overall Agreement

No set of standards, however well thought out, can cover all cases with equal uniformity. In most instances the “Four Cardinal Rules” will work well. Inevitably, however, situations will arise when the level of authenticity required of a trail segment may be much higher than a strict application of the four rules would warrant. In such cases, the researcher-mapper will have to rely on balanced judgment, acquired through experience, to arrive at a final determination. Ultimately, the trail mapper bears the responsibility of reaching a decision on where the trail is located; the rules can not do that.

4. Ranking the Reliability of Evidence Used to Verify Trail Location (pages 5 - 8, MET) In the best of all situations, the trail researcher examines all the relevant written, cartographic, physical, and artifact evidence, and finds them mutually supporting. What does the researcher do

when different kinds of evidence conflict? How does one determine the relative reliability of different types of evidence (Appendix D). Examples of the first two rankings of evidence follows.

- Though it may not apply in all situations, as a general rule the closer in time the evidence is in relation to the trail under investigation, the more reliable that evidence becomes.
- When adequate diary/journal or physical/artifact evidence is lacking, the researcher must rely heavily on the next best source of evidence, usually later reports or maps, especially GLO plats. In all cases, one must utilize all types of evidence, keeping in mind that the closer the evidence is in time to the period of the trail's use, the more reliable it becomes.

5. Guidelines For Locating Wagon Trails (pages 8 - 11, MET) The following guidelines (number 1 - 20) focus on the most common surface characteristics and configurations, as well as other indicators, that can be used to locate and identify emigrant wagon trails. Guideline Number 1 follows (see (Appendix E for comprehensive list).

1. In hilly or mountainous terrain, emigrant wagons generally followed ridges or higher elevations rather than gullies, ravines, or canyons. Evidence of trails is likely to be found on ridges rather than down or up narrow canyons or ravines. However, in very arid regions having hilly and/or rocky terrain, trails frequently followed the easier route of dry, sand-filled washes.

6. Conclusion (page 12, MET) The text conclusion of the MET Manual reminds the HETC HNA&HS Co-Project Leaders that even OCTA's most experienced trail trackers encountered puzzling anomalies leading to unanswerable questions. No single person is capable of furnishing all the answers, and the Hugo GLO SubCommittee is a team that is hard to compete with in numbers, experience, passion, and the dedication to document their application of MET methods. For them the MET is the scientific method of locating, verifying, classifying and plotting the Applegate Trail in our region. They are proudly comfortable being one of the nerds of the *Trail* with other members of the GLO SubCommittee with their shout "We are the group!" The conclusion of the MET Manual follows in its entirety (Appendix F).

C. Emigrant Trail Classification Categories (pages 13 - 14, MET)

Five classification categories for overland emigrant trails are designed to assess the condition of trails at the time of mapping and establish a basis on which to recommend levels of preservation and use for trails on public lands. The five categories are OCTA's standard classifications for all emigrant trail mapping (Appendix G. Emigrant Trail Classification Categories).

a) Class 1: Unaltered Trail (page 13, MET) Class 1. ① Unaltered Trail. It retains its original character. Should Be Preserved (MET Manual, page 13).

b) Class 2: Used Trail (page 13, MET) Class 2. ② Used Trail. It retains elements of its original character, but shows use by motor vehicles. Should Be Preserved (MET Manual, page 13).

c) Class 3: Verified Trail (page 14, MET) Class 3. ③ Verified Trail. It is accurately located and verified, but trail traces are nonexistent or insignificant. Should Be Preserved (MET Manual, page 14).

d) Class 4: Altered Trail (page 14, MET) Class 4. ④ Altered Trail. It is verified, but elements of its original condition are permanently altered. May be Desirable to Preserve (MET Manual, page 14).

d) Class 5: Approximate Trail (page 14, MET) Class 5. ⑤ Approximate Trail. It is obliterated or unverifiable and its location is known only approximately. No Preservation Recommended (MET Manual, page 14).

Additional Guidelines for Classifying Trails (page 15, MET) This paragraph introduction to the MET section on “Additional Guidelines for Classifying Trails” represents the values and beliefs of the HETC HNA&HS Co-Project Leaders. They observe that this section is only one page long in the MET. However, its value is incalculable in its insight. Only the first paragraph follows as a taste to the reader.

Most emigrant trails still retaining evidence of wagon use – in the form of ruts, swales, scarring, or tracks – probably have undergone later 19th century use due to freighting, mining, stage, or ranching activity. Therefore, rarely will visible trail remains be the result solely of emigrant wagon use. Also, because these wagon trails have had little or no use in the 20th century, either erosion or restoration have often changed their appearance where they no longer look like they did in the 19th century. Nonetheless, these trail segment segments still retain their emigrant wagon-use character and quality as Class I.

3. Trail Terminology (page 16, MET) The MET Manual identifies 10 trail terms for the purpose of standardizing the definitions along with simple figures of what they look like in the field.

- Trace
- Depression
- Swale
- Rut
- Erosion Feature
- Track
- Scarring
- Two-Track
- Improved Road
- Secondary Road

On open sagebrush plains and alkali flats, depressions, swales, scarring, and tracks may be much wider than the width of a wagon (approximately five feet wide). This is due to emigrants either moving their wagons over to a parallel trace of fanning out to avoid heavy dust and deep, loose sand.

III. SUMMARY

In summary, the Co-Project Leaders, HETC supports OCTA's goal to produce the definitive mapping of the overland emigrant trails based on the research methods, field verification techniques, and classification system advanced in the MET Manual.

MET Manual Conclusion. Parts of our priceless national heritage are being threatened or lost every year simply because of the lack of authoritative knowledge about trail locations. Consequently, it is important that OCTA map the trails as quickly as possible, consistent with historical accuracy, and make this information available to public agencies and private landowners for purposes of trail preservation. Therefore, the sooner the MET program is completed, the sooner our overland-trails heritage will be protected and preserved.

A foundation principal of the HETC, HNA&HS carrying out its mission in the winter-wet, mountainous terrain of Southwestern Oregon is to research and map emigrant trails through the use of the methods and procedures identified in the OCTA MET Manual.

The accuracy and reliability of the MET program rests on the quality of research; it is therefore important to emphasize the methods used to locate and verify emigrant wagon trails.

Documentary evidence (trail literature of all types) is the main historical resource available to the trail researcher, therefore, MET participants must have a basic familiarity with the literature of the trails.

Emigrant diaries and journals – eyewitness accounts of trails – usually provide the most reliable documentary evidence for trail research and field verification.

For the location of an emigrant trail segment to be considered as verified, it must conform to the following Four Cardinal Rules: 1. Coherence Rule: Linear Uniformity, 2. Corroborative Rule: Confirming [Written] Evidence, 3. Collateral Rule: [Confirming] Physical/Topo Evidence, and 4. Correlation Rule: Overall Agreement.

In the best of all situations, the trail researcher examines all the relevant written, cartographic, physical, and artifact evidence, and finds them mutually supporting. A ranking of relative reliability of different types of evidence is identified when the evidence is not mutually supporting.

Guidelines for locating wagon trails focus on the most common surface characteristics and configurations, as well as other indicators, that can be used to locate and identify emigrant wagon trails.

Five classification categories for overland emigrant trails are designed to assess the condition of trails at the time of mapping and establish a basis on which to recommend levels of preservation and use for trails on public lands.

Ten (10) trail terms are identified for the purpose of standardizing the definitions along with simple figures of what they look like in the field.

Finally, the HETC recognizes as OCTA does that no system is perfect and it applauds OCTA's ongoing efforts to revised the MET Manual as needed.

IV. OCTA's MET MANUAL RESOURCES

A. Oregon-California Trails Association (OCTA)

<http://octa-trails.org/>

OCTA Preservation Training Resources

<http://octa-trails.org/preserve/training.php>

MET Manuals

<http://octa-trails.org/preserve/training.php>

MET Manual

MET Field Manual

Trail Mapping with GPS & Mapping Software

Training Briefs

<http://octa-trails.org/preserve/training.php>

1. Introduction
2. Trail Monitoring
3. Mapping Emigrant Trails
4. Trail Classifications
5. GPS & Mapping Software
6. Trail Marking
7. OCTA Trail Marking Policy
- . Preservation Basics

The OCTA headquarters is located on the grounds of the National Frontier Trails Center (318 West Pacific) and houses our Merrill J. Mattes Research Library.

524 South Osage Street
Independence, MO 64051-0519

Oregon-California Trails Association
P.O. Box 1019
Independence, MO 64051-0519
888 811- 6282 Toll Free

B. OCTA Northwest Chapter

<http://octa-trails.org/chapters/northwest/index.php>

Chapter Mission The mission of the Northwest chapter of OCTA is to support and initiate local efforts using private and governmental partners and to join with adjacent chapters in support of

the national association efforts in identifying, preserving, protecting and educating the public about the Oregon Trail and California Overland Trail legacy.

Contact Us

OCTA Northwest Chapter
 Attn: Marley Shurtleff
 1700 Blaine Ave NE
 Renton WA 98056-2729
 (425) 271-2485

OCTA Northwest Chapter Leadership

Officers

Position	Term	Name	Location
President	2012-2013	Jim Tompkins	Beavercreek, OR
Vice-President	2012-2013	Rich Herman	Vancouver, WA
Secretary	2012-2013	Polly Jackson	Seattle, WA
Treasurer	2012-2013	Glenn Harrison	Albany, OR
Past-President	2012-2013	Roger Blair	Pendleton, OR
Director	2011-2012	Skip Masseur	Gig Harbor, WA
Director	2011-2013	Jim Riehl	Albany, OR
Director	2012-2014	Lynne Alvord	Selah, WA

Appointees

Position	Name	Location
Communications & Web Editor	Marley Shurtleff	Renton, WA
Historian	Lethene Parks	Vancouver, WA
Preservation Officer	Billy Symms	Yachats, OR
Marking & Mapping	Henry Pittock	Corvallis, OR

National OCTA Committees Much of the volunteer work of OCTA is carried out through a network of committees.

Committees	Chair
Challenge Cost Share	Marley Shurtleff
Internet	Marley Shurtleff
Nominating & Leadership	Glenn Harrison
Photography	Roger Blair
Preservation	Leslie Fryman Public
Trail Mapping/Marking	Dave Welch

APPENDICES

- Appendix A. HETC's Web Research Publications on Applegate Trail
- Appendix B. General Principles Governing Trail Location & Verification
- Appendix C. Cardinal Rules of Trail Verification
- Appendix D. Ranking the Reliability of Evidence Used to Verify Trail Location
- Appendix E. Guidelines For Locating Wagon Trails
- Appendix F. MET Manual Conclusion
- Appendix G. Emigrant Trail Classification Categories

Appendix A. HETC's Web Research Publications on Applegate Trail

1. HETC's

Applegate Trail Program Brochures & Early Inventory Brochures
http://www.hugoneighborhood.org/Applegate_Trail_Program.htm

Applegate Trail Fords Brochure Series
<http://www.hugoneighborhood.org/applegatetrailfords.htm>

Hugo's Trapper Trail Brochure Series
<http://www.hugoneighborhood.org/trappertrailseries.htm>
Inventory Brochures
<http://www.hugoneighborhood.org/inventorybrochures.htm>

Federal Land Transfers
<http://www.hugoneighborhood.org/map5.htm>

OCTA's Composite Mapping Project for Emigrant Trails
http://www.hugoneighborhood.org/OCTAs_Composite_Mapping_Project.htm

Maps
http://www.hugoneighborhood.org/Misc_Maps.htm

2. Diaries, Journals & Reminiscences Sub-Committee

Diaries, Journals, Letters & Reminiscences
<http://www.hugoneighborhood.org/diaries.htm>

3. GLO SubCommittee

General Land Office (GLO) Survey Notes

http://www.hugoneighborhood.org/general_land_office_survey_notes.htm

General Land Office Maps

http://www.hugoneighborhood.org/general_land_office_maps.htm

Other Surveys & Maps

http://www.hugoneighborhood.org/other_surveys_and_maps.htm

Educational Resources

http://www.hugoneighborhood.org/miscellaneous_research_papers_and_documents.htm

Hugo Field Inventories/Trips

<http://www.hugoneighborhood.org/fieldtrips.htm>

Appendix B. General Principles Governing Trail Location & Verification

1. Probability All too often the exact location of an emigrant trail segment cannot be verified with absolute certainty. In most situations, however, the trail researcher can strive for a higher degree of probability by utilizing all the available evidence and following correct procedures. Verifying the extent to which a trail is an authentic emigrant trail may pose a problem. What appears as an emigrant trail may have originated as a later period of freighting, mining, military, or stage road. In such cases, the researcher must determine the degree of probability that the trail in question did in fact originate as an emigrant trail.

2. Analogy The trail historian can only measure the unknown by what is known through analogy. The location of a possible trail segment can be authenticated only by comparing and contrasting it with what is already known about other verified emigrant trails. These analogous relationships include all types of documentary and physical evidence. Thus, to authenticate newly - located trail segments, the trail researcher must apply the accumulated knowledge gained from previously verified trail segments to similar conditions found on the “newly - discovered” segments.

Appendix C. Cardinal Rules of Trail Verification (page 5, MET)

For the location of an emigrant trail segment to be considered as verified, it must conform to the following “Four Cardinal Rules.” Where conditions exist such that any of these four rules do not apply, the probability level is reduced accordingly. Essentially, these “Four Cardinal Rules” becomes a standard for assessing the degree of probability that the researcher/mapper has accurately located an emigrant trail segment.

a) Coherence Rule: Linear Uniformity (page 5, MET) There must be linear uniformity so that the trail segments form a continuous sequence; i.e., the trail segment under investigation has to link coherently with the trail segments that precede and follow it.

b) Corroborative Rule: Confirming [Written] Evidence (page 5, MET) There must be confirming documentary evidence of the trail; i.e., the trail segment under investigation has to have valid written or cartographic evidence to support its authenticity. (See below: “Ranking the Reliability of Different Types of Evidence Use to Verify Tail Location.”)

c) Collateral Rule: [Confirming] Physical/Topo Evidence (page 5, MET) There must be accompanying physical and/or topographic evidence of a trail; i.e., the trail segment under investigation has to have some geomorphic or artifact evidence to support it as an authentic emigrant trail. (See “Guidelines for Locating Wagon Trails,” page 8.)

d) Correlation Rule: Overall Agreement (page 5, MET) There must be overall agreement between all types of evidence; i.e., the evidence resulting from the first three cardinal rules have to be mutually supporting (not contracting one another) in order to verify the location of a trail segment.

No set of standards, however well thought out, can cover all cases with equal uniformity. In most instances the “Four Cardinal Rules” will work well. Inevitably, however, situations will arise when the level of authenticity required of a trail segment may be much higher than a strict application of the four rules would warrant. In such cases, the researcher-mapper will have to rely on balanced judgment, acquired through experience, to arrive at a final determination. Ultimately, the trail mapper bears the responsibility of reaching a decision on where the trail is located; the rules can not do that.

Appendix D. Ranking the Reliability of Evidence Used to Verify Trail Location (pages 5 - 8, MET)

In the best of all situations, the trail researcher examines all the relevant written, cartographic, physical, and artifact evidence, and finds them mutually supporting. What does the researcher do when different kinds of evidence conflict? How does one determine the relative reliability of different types of evidence.

- Though it may not apply in all situations, as a general rule the closer in time the evidence is in relation to the trail under investigation, the more reliable that evidence becomes.
 - When adequate diary/journal or physical/artifact evidence is lacking, the researcher must rely heavily on the next best source of evidence, usually later reports or maps, especially GLO plats. In all cases, one must utilize all types of evidence, keeping in mind that the closer the evidence is in time to the period of the trail's use, the more reliable it becomes.
1. Written eyewitness descriptions that locate the trail with reasonable accuracy or exactness.
 2. Written eyewitness descriptions that locate the trail in a general way or direction.
 3. Remaining physical, vegetation, or artifact evidence of wagon trails that correspond to either diary or plat evidence.
 4. General Land Office (GLO) cadastral survey plats.
 5. Topographic features that serve to confine wagon travel can aid interpretation of sketchy diary accounts and GLO plats. However, emigrant trails often defy modern reasoning on the route these trails should have taken. Be cautious, therefore, of second guessing emigrant reasoning and practices.
 6. Reports that describe the location of emigrant trails, such as federal, state, county, territorial, military, and railroad surveys undertaken in the 1850 and later.
 7. Maps that show the location of either emigrant trails or possible emigrant trails.
 8. Recent evidence and documentation.
- Experience has shown that caution must be exercised when using some of the preceding types of evidence and documentation. Even detailed diary account can be misleading or confusing.
 - GLO plats, despite their potential for inaccuracies and omissions, are among the most useful and available sources we have for determining the emigrant trail routes.
 - Information gleaned from trail buffs, local residents, ranchers, foresters, and government agency people can be quite useful. However, as with any piece of evidence gathered by the trail researcher, it must be rigorously evaluated and verified. Just because someone insists the trail is over here or over there does not make it authoritative. The researcher should be open to but cautious about acceptance of this kind of trail information.

Appendix E. Guidelines For Locating Wagon Trails (pages 8 - 11, MET)

The following guidelines (number 1 - 20) focus on the most common surface characteristics and configurations, as well as other indicators, that can be used to locate and identify emigrant wagon trails (Appendix E. Guidelines For Locating Wagon Trails).

1. In hilly or mountainous terrain, emigrant wagons generally followed ridges or higher elevations rather than gullies, ravines, or canyons. Evidence of trails is likely to be found on ridges rather than down or up narrow canyons or ravines. However, in very arid regions having hilly and/or rocky terrain, trails frequently followed the easier route of dry, sand-filled washes.
 2. When encountering hills on steep ascents/descents, wagons normally traveled directly up or down to avoid sideling on steep slopes. Trails traversing along the sides of slopes usually will not be emigrant wagon trails. Exceptions might be where there was either no alternative to a steep slope or the slope angle was not steep enough to make wagons unstable.
 3. Traveling up or down hills, wagons often left swales and ruts that eventually caught runoff and took on the appearance of natural drainage features, thereby making it difficult to distinguish between a naturally occurring drainage and one that resulted from wagon use. Generally, wagons ascended and descended on the spine of a ridge rather than up or down gullies. Therefore, an unnatural drainage on the spine of a hill may indicate a one-time wagon trail.
- 4-17. See MET Manual.
18. In forested areas, loggers often used emigrant wagon traces for skidding logs which resulted in these traces not appearing as swales. Also, loggers often pulled logging arches and other wheeled equipment up and down ravines and gullies which left swales or ruts that would not be emigrant in origin.

19-20. See MET Manual.

Other indicators (nine indicators) can be either helpful or misleading in locating emigrant wagon trails (pages 10 - 11, MET).

Appendix F. MET Manual Conclusion (page 12, MET)

These guidelines for determining trail remnants and segments can not cover all situations. Even our most experienced trail trackers encountered puzzling anomalies leading to unanswerable questions. Why has the trail vanished in some undisturbed places while in other undisturbed places – often very near, in similar terrain, and with identical soil conditions – the trail remains in pristine condition? Quite often there is no obvious explanation why no visible trace remains when it can be established beyond doubt that the trail passed that way. Why do some remaining ruts, swales and depressions appear so differently? Why are some swales twenty feet wide and several feet deep while on a segment perhaps a half mile back, in similar terrain, the trail is no wider than one wagon and consists of a shallow depression? There is much to learn about the conditions that have led to the survival of some trail traces and the disappearance of others.

Most trail segments that remain visible today have been impacted by man and nature during the post-emigrant period. Subsequent human impact on earlier emigrant trails may have taken the form of stage, freighting, or ranch use and even road building. Nature may have been involved, in which case the trail may not appear as an eroded trough, deep, wide swale or gully. In some sand areas, wind will have blown away loose soil and sand, leaving huge, deep, wide swales not covered with grass. Where the original emigrant trail has not had some kind of subsequent use or impact, it may have all but vanished – gradually fading into the surrounding terrain. Often, only vestiges of emigrant trails remain, barely kept visible by cattle and humans walking on them. Therefore, the vanishing character of emigrant trails makes it all the more imperative that we locate, verify, and map them before they become indistinguishable from the surrounding landscape.

The Mapping Committee is convinced that careful adherence to the MET research and investigative procedures will lead to increased accuracy in locating and verifying emigrant trails. (For a very effective way of using diary/journal accounts to locate and verify emigrant trail segments, see Appendix C, “the Composite Trail Description Method of Locating and Verifying Trails.”) Also, gathering as much information as possible before going into the field – from diaries, GLO plats, old survey, and maps, and more recent public and private surveys – will make the mapping task much more effective. However, all experienced trail mappers have learned that the more research and field verification they conduct the more questions they raise that, in turn, lead to longer hours in the field seeking verification of trails. One should avoid jumping to quick conclusions. When in doubt, contact other MET mappers and engage them in a dialogue. They may have alternative solutions and/or insights. Involving other trail experts is always helpful in resolving conflicting evidence or seemingly unanswerable questions. No single person is capable of furnishing all the answers. The more questions and alternatives that are raised and reviewed, the closer the record comes to being an accurate representation of the past.

Most importantly, the mapper should conduct field investigation and authentication with an open mind. The easy things are readily resolved; the difficult problems may require additional research and field work. The mapper should avoid going into the field with preconceptions that lead to “make things fit” especially when they don’t seem to square with the evidence. The MET program is open-ended. It is designed to allow for doubts and to provide for corrections and additions as new materials and evidence come to light. History is a matter of building upon what has gone before. It isn’t a matter of being “right.” It is more a matter of putting forth what research has indicated has the highest degree of probability. All mapping endeavors should be considered as the opening of an on-going dialogue. That’s the historical process at work.

Appendix G. Emigrant Trail Classification Categories (pages 13 - 14, MET)

The following five classification categories for overland emigrant trails are designed to assess the condition of trails at the time of mapping and establish a basis on which to recommend levels of preservation and use for trails on public lands. The five categories are OCTA's standard classifications for all emigrant trail mapping (MET Manual, pages 13 - 15).

CLASSIFICATION CATEGORIES

Class 1: Unaltered Trail

Symbol: ①

Description: The trail retains the essence of its original character and shows no evidence of having been either impacted by motor vehicles or altered by modern road improvements. There is visible evidence of the original trail in the form of depressions, ruts, swales, tracks, or other scars, including vegetation differences and hand-placed rock alignments along the trail side.

Preservation: Should be preserved and kept free from all human-made development and intrusions, with a protective corridor adequate to maintain the integrity of location, design, setting, materials, workmanship, feeling, and association.

Use: Restricted to hiking and possibly horseback riding, as long as the physical integrity of the trail is not altered.

Class 2: Used Trail

Symbol: ②

Description: The trail retains elements of its original character, but shows use by motor vehicles, typically as a two-track road overlaying the original wagon trail. There is little evidence of having been altered permanently by modern road improvements, such as widening, blading, grading, crowning, or graveling. In forested areas the trail may have been used for logging but still retains elements of its original character.

Preservation: Should be preserved from further human-made alterations and intrusions, including road improvements and use as a pipe/utility corridor. The trail should have a protective corridor adequate to maintain the integrity of location, setting, feeling, and association.

Use: Restricted to hiking, horseback riding, and motor vehicles as long as the physical integrity of the trail is not permanently altered. Where the Used Trail has been abandoned and is badly eroded and/or overgrown with vegetation, it may be desirable to restrict use to hiking and horseback riding.

Class 3: Verified Trail

Symbol: ③

Description: The main route is accurately located and verified from written, cartographic, artifact, topographical, and/or wagon wheel impact evidence (as rust, grooved or polished rocks). But due to subsequent weathering, erosion, vegetative succession, or logging, trail traces will be nonexistent or insignificant. What does remain is a verified trail corridor with no intrusive modern development. Typically this includes trails that once passed through forest and meadows, across excessively hard surfaces or bedrock (such as ridges), over alkali flats and sandy soils, and through ravines or washes.

Preservation: Should be preserved from any further human-made alterations and intrusions, with a protective corridor adequate to maintain the integrity of location, design, setting, materials, feeling, and association.

Use: Restricted to hiking and horseback riding, consistent with preserving the setting of the trail corridor.

Class 4: Altered Trail

Symbol: ④

Description: The trail location is verified but elements of its original condition have been permanently altered, primarily by road construction, such as widening, blading, grading, crowning, graveling, or paving. In some cases, the original trail has been permanently altered by underground cables and pipelines.

Preservation: Although an altered trail no longer contributes to the integrity of design, setting, materials, workmanship, feeling, or association, a protective corridor may be desirable in some area as a way to retain the trail integrity of adjacent or connected Class 1, 2, or 3 segments.

Use: Generally unrestricted. However, in protected corridors, use should be consistent with maintaining the integrity of adjacent or connected Class 1, 2, or 3 segments.

Class 5: Approximate Trail

Symbol: ⑤

Description: The trail is either so obliterated or unverifiable that its location is known only approximately. In some cases, the trail has been destroyed entirely by development, such as highways, structures, agricultural or utility corridors. In others, it has been inundated beneath reservoirs. In some, there is not enough historical or topographic evidence by which to locate the trail accurately. Thus, only the approximate route is known.

Preservation: None recommended.

Use: Unrestricted.