Appendix A

Environmental Coordination

Appendix A. Environmental Coordination

The following project agency correspondence is included:

Agency	Date
FEMA	January 15, 2003
USFWS Ecological Services to JF Sato and Associates, initial coordination	November 18, 2003
USFWS Preble's meadow jumping mouse concurrence letter to JF Sato and Associates	July 29, 2004
USFWS Ute ladies'-tresses orchid concurrence letter to JF Sato and Associates	October 13, 2004
USDOT, FHWA to tribes	April 7, 2004
USDOT, FHWA Section 106 Tribal Consultation Interest Response Forms from:	
Cheyenne and Arapaho Tribes of Oklahoma	April 26, 2004
Pawnee Nation of Oklahoma	April 26, 2004
Rosebud Sioux Tribe	May 3, 2004
Kiowa Tribe of Oklahoma	May 12, 2004
Southern Ute Indian Tribe	May 6, 2004
Northern Arapaho	June 3, 2004
Larimer County Engineering Department to CDOT	May 21, 2004
City of Loveland Public Works to CDOT	May 21, 2004
JF Sato and Associates to USCOE	May 24, 2004
USDA, NRCS AD 1006	June 16, 2004
FHWA, CDOT, SHPO Section 106 Consultation	
CDOT initial Section 106 letter to SHPO	September 27, 2004
SHPO response to CDOT initial letter	September 30, 2004
City of Loveland letter to CDOT on Section 106	October 6, 2004
CDOT response to City of Loveland	December 9, 2004
CDOT response to SHPO letter of September 30, 2004	May 23, 2005
CDOT letter to City of Loveland with added data	May 24, 2005
CDOT letter to SHPO with additional information	June 24, 2005
SHPO response to CDOT letters of May 23, 2005 and June 24, 2005	June 29, 2005

Agency	Date
CDOT letter to City of Loveland with added data	July 27, 2005
CDOT letter to SHPO with added data	July 27, 2005
SHPO response to CDOT letter of July 27 and July 29, 2005	August 9, 2005
CDOT letter to City of Loveland with added data	March 10, 2006
CDOT letter to SHPO with added data	March 10, 2006
SHPO response to CDOT letter of March 10, 2006	March 30, 2006
CDOT letter to SHPO with added data	May 1, 2006
SHPO response to CDOT letter of May 1, 2006	May 26, 2006
CDOT letter to SHPO with added data	July 17, 2006
SHPO response to CDOT letter of July 17, 2006	July 24, 2006
CDOT letter to City of Loveland with request for comment	August 15, 2006
CDOT letter to SHPO requesting concurrence	August 15, 2006
SHPO letter to CDOT including concurrence	August 22, 2006
SHPO letter to CDOT including concurrence	September 13, 2006
CDOT letter to ACHP on Adverse Effect	October 19, 2006
Memorandum of Agreement between FHWA and the Colorado SHPO regarding the Weber Farm (5LR10725)	February 9, 2007
SHPO letter to CDOT on Level II Documentation	May 7, 2007
Transmittal from CDOT Historian of SHPO Clearance	May 14, 2007
CDOT letter to FHWA and signed concurrence from FHWA on Section 4(f) *de minimis* impacts	September 29, 2006 and November 15, 2006

NATIONAL FLOOD INSURANCE PROGRAM

FEMA MAP COORDINATION CONTRACTOR

January 15, 2003

IN REPLY REFER TO:
Case No.: B0308016
Community: Larimer County, CO
Identifier: Big Thompson River

Ms. Brenda Kurschner
J.F. Sato & Associates
5898 South Rapp St.
Littleton, CO 80120

Dear Ms. Kurschner:

This letter is in response to your January 14, 2003, letter requesting a Hydraulic and Hydrology model for Big Thompson River shown on Panel 245B dated 04/02/79 in Larimer County, CO. I am writing to inform you that we could not locate the information that you requested.

If you have any questions regarding your request or this letter, or if we may be of further assistance, please contact me by telephone at (703) 317-6531, by fax at (703) 329-3023, or by electronic mail at *kporterfield@mbakercorp.com*.

Sincerely,

Kerri Porterfield

Kerri E. Porterfield
FEMA Project Library

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Colorado Field Office
755 Parfet Street, Suite 361
Lakewood, Colorado 80215

IN REPLY REFER TO:
ES/CO:T&E
Mail Stop 65412

NOV 18 2003

Debra Barringer
J. F. Sato and Associates
5898 South Rapp Street
Littleton, Colorado 80122

Dear Ms. Barringer,

The U.S. Fish and Wildlife Service (Service) received your request September 24, 2003, regarding the proposed highway reconstruction project on State Highway 402 in Larimer County, Colorado. In that letter, you requested an updated list of Federal endangered and threatened species that may exist in the project area. Your previous list is from 2001. These comments have been prepared under the provisions of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et. seq.).

Following is a list of Federal endangered, threatened, proposed and candidate species for Larimer County, which may be used as a basis for determining additional listed species potentially present in the project area. While other species could occur at or visit the project area, endangered or threatened species most likely to occur include:

Birds:	Bald Eagle (*Haliaeetus leucocephalus*), Threatened
Mammals:	Preble's meadow jumping mouse (*Zapus hudsonius preblei*), Threatened
Plants:	Ute ladies'-tresses orchid (*Spiranthes diluvialis*), Threatened Colorado butterfly plant (*Gaura neomexicana* ssp. *coloradensis*), Threatened

The Service also is interested in the protection of species which are candidates for official listing as threatened or endangered (Federal Register, Vol. 61, No. 40, February 28, 1996). While these species presently have no legal protection under the Act, it is within the spirit of this Act to consider project impacts to potentially sensitive candidate species. It is the intention of the Service to protect these species before human-related activities adversely impact their habitat to a degree that they would need to be listed and, therefore, protected under the Act. Additionally, we wish to make you aware of the presence of Federal candidates should any be proposed or listed prior to the time that all Federal actions related to the project are completed. If any candidate species will be unavoidably impacted, appropriate mitigation should be proposed and discussed with this office.

While the Service has no specific knowledge of the presence of these species within the project area, the following may occur in or visit the project area.

Mammals: Black-tailed prairie dog (*Cynomys ludovicianus*)

Additionally, any water depletions to the South Platte River system that relate to this project may need to be consulted on with the Service as stipulated in section 7 of the Act. It has been determined by the Service that any depletions to this river system will have detrimental effects on eight threatened or endangered species found in Nebraska. Those species are: whooping crane, piping plover, interior least tern, Western prairie fringed orchid, American burying beetle, bald eagle, Eskimo curlew, and the pallid sturgeon.

If the Service can be of further assistance, please contact Alison Deans Michael of this office at (303) 275-2370.

Sincerely,

Susan C. Linner
Colorado Field Supervisor

pc: CDOT (T. Boyce)
Michael

Ref:Alison\CDOT2003\Reg4

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Colorado Field Office
755 Parfet Street, Suite 361
Lakewood, Colorado 80215

IN REPLY REFER TO:
ES/CO: T&E/PMJM/Other
MS 65412 Lkwd

received
7/30/04

JUL 29 2004

Debra Barringer
J.F. Sato & Associates
5898 South Rapp Street
Littleton, Colorado 80120

Dear Ms. Barringer:

We are responding to your letter of July 12, 2004, facsimile of July 28, 2004, and email of July 28, 2004, requesting clearance under the authority conferred to the U.S. Fish and Wildlife Service (Service) by the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*). The Service has reviewed the Preble's meadow jumping mouse, *Zapus hudsonius preblei* (Preble's), 2001 habitat assessment report, with updated site photographs, for the proposed **road improvement project for State Highway 402 between US 287 and the I-25 interchange** in Larimer County, Colorado.

Based on the information provided, and given your compliance with the Preble's survey guidelines, the Service finds the report acceptable and agrees that a population of Preble's is not likely to be present within the subject area along the Big Thompson River. Thus, the Service concludes that the proposed project on this site should not have direct adverse affects to Preble's. Since Preble's populations exist downstream from the site, actions on the site that result in significant modifications of Preble's habitat downstream (for example, through alteration of existing flow regimes, or sedimentation) may be subject to provisions of the ESA.

Please note that this clearance is valid for one year from the date of this letter. Should project plans change or additional information on listed or proposed species becomes available, this determination may be reconsidered under the ESA. If the proposed project has not commenced within one year, please contact the Colorado Field Office to request an extension.

If we can be of further assistance, please contact Barbara Spagnuolo of my staff at (303) 275-2370.

Sincerely,

Susan C. Linner
Colorado Field Supervisor

cc: FWS/CFO: Alison Michael
FWS/CFO: B. Spagnuolo

Reference: BJS\Larimer\SH402.wpd

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
Colorado Field Office
755 Parfet Street, Suite 361
Lakewood, Colorado 80215

IN REPLY REFER TO:
ES/CO: T&E/*Spiranthes*/Larimer County
Mail Stop 65412

OCT 13 2004

Jeff Peterson
Colorado Department of Transportation
4201 E. Arkansas, Empire Park B-400
Denver, Colorado 80222

Dear Mr. Peterson,

Based on the authority conferred to the U.S. Fish and Wildlife Service (Service) by the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*), the Service reviewed the Ute ladies'-tresses orchid, *Spiranthes diluvialis* (orchid) survey report dated July 15, 2004, and received September 13, 2004, prepared by J.F. Sato and Associates. This report regards the **State Highway (SH402) Improvement Project** in Larimer County, Colorado. The proposed project includes widening the roadway and will result in impacts to wetland and riparian habitats.

Given your surveys of the area, as well as subsequent telephone conversations with the surveyor, the Service finds the report acceptable and agrees that the orchid is not present within the surveyed area. Thus, the Service concurs with the determination that the impacts resulting from the proposed project are not likely to adversely affect the continued existence of the orchid.

We appreciate your submitting this report to our office for review and comment. If the Service can be of further assistance, please contact Alison Deans Michael of my staff at (303) 275-2370.

Sincerely,

Susan C. Linner
Colorado Field Supervisor

U.S. Department
Of Transportation
Federal Highway
Administration

Colorado Federal Aid Division
555 Zang Street, Room 250
Lakewood, CO 80228-1040

April 7, 2004

Ms. Maxine Natchees, Chairwoman
Uintah and Ouray Tribal Business Committee
P.O. Box 190
Ft. Duchesne, UT 84026

Dear Ms. Natchees:

Subject: Request for Section 106 Consultation;
State Highway 402, US 287 to I-25
Environmental Assessment, Larimer County, Colorado

The Federal Highway Administration (FHWA) and Colorado Department of Transportation (CDOT) are preparing an Environmental Assessment (EA) that will address the effects of proposed improvements to a four-mile segment of State Highway 402 in Larimer County, Colorado. The project seeks to improve mobility and safety along this narrow two-lane corridor, while simultaneously alleviating congestion. Pursuant to the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality (CEQ) implementing regulations (40 CFR 1500-1508), FHWA and CDOT are documenting the potential social, economic and environmental consequences of this action. Please refer to the enclosed map and aerial photograph for specific locational information.

The FHWA will serve as the lead agency for this undertaking, and CDOT staff will facilitate the tribal consultation process. The agencies are seeking the participation of regional Native American tribal governments in cultural resources consultation, as described in Section 106 of the National Historic Preservation Act and implementing regulations 36 CFR 800 et seq. As a consulting party, you are offered the opportunity to identify concerns about cultural resources and comment on how the project might affect them. Further, if it is found that the project will impact cultural resources that are eligible for inclusion on the National Register of Historic Places and are of religious or cultural significance to your tribe, your role in the consultation process would also include participation in resolving how best to avoid, minimize, or mitigate those impacts. It is our hope that by describing the proposed undertaking we can be more effective in protecting areas important to American Indian people. If you have interest in this project and in cultural resources that may be of religious or cultural significance to your tribe, we invite you to be a consulting party.

BUCKLE UP AMERICA

The project corridor along State Highway 402 is largely rural, although residential developments, ranch properties and commercial businesses are also present in limited numbers (please refer to the aerial photograph). A comprehensive survey and assessment of historic properties in the project's area of potential effect will be conducted. Any information you may have regarding the location of cultural resources in this area would assist us in this effort.

We are committed to ensuring that tribal governments are informed of, and involved in, decisions that may impact places with cultural significance. If you are interested in becoming a consulting party for the State Highway 402 Environmental Assessment, please complete and return the enclosed Consultation Interest Response Form to CDOT Native American consultation liaison Dan Jepson **within 60 days** at the address or facsimile number listed at the bottom of that sheet. Mr. Jepson can also be reached via Email at Daniel.Jepson@dot.state.co.us or by telephone at (303) 757-9631. The 60-day period has been established to encourage your participation at this stage in project development. Failure to respond within this time frame will not prevent your tribe from becoming a consulting party at a later date. However, studies and decision-making will proceed and it may become difficult to reconsider previous determinations or findings, unless significant new information is introduced.

Thank you for considering this request for consultation.

Sincerely yours,

for William C. Jones
Division Administrator

Enclosures
cc: Ms. Betsy Chapoose, Director
Cultural Rights & Protection Office
J. Wallace, FHWA
B. Ploegstra, CDOT Region 4
D. Jepson, CDOT Env. Prog.

FEDERAL HIGHWAY ADMINISTRATION/COLORADO DEPARTMENT OF TRANSPORTATION
SECTION 106 TRIBAL CONSULTATION INTEREST RESPONSE FORM

PROJECT: State Highway 402 Environmental Assessment

The Cheyenne + Arapaho Tribes of Okla. Tribe [is / is not] (**circle one**) interested in becoming a consulting party for the Colorado Department of Transportation project referenced above, for the purpose of complying with Section 106 of the National Historic Preservation Act and its implementing regulations (36 CFR 800). If your tribe will be a consulting party, please answer the questions below.

Signed: William L Pedro NAGPRA
Name and Title
NHPA + Sand Creek Rep. for the Southern Arapaho

CONSULTING PARTY STATUS [36 CFR §800.2(c)(3)]
Do you know of any specific sites or places to which your tribe attaches religious and cultural significance that may be affected by this project?

Yes No If yes, please explain the general nature of these places and how or why they are significant (use additional pages if necessary). Locational information is not required.

SCOPE OF IDENTIFICATION EFFORTS [36 CFR §800.4(a)(4)]
Do you have information you can provide us that will assist us in identifying sites or places that may be of religious or cultural significance to your tribe?

Yes No If yes, please explain.

CONFIDENTIALITY OF INFORMATION [36 CFR §800.11(c)]
Is there any information you have provided here, or may provide in the future, that you wish to remain confidential?

(Yes) No If yes, please explain.

We CONCERN About uncovering of Human Remains + All artifacts that might be uncovered during Construction

Please complete and return this form within 60 days via US Mail or fax to:

Dan Jepson, Section 106 Native American Liaison
Colorado Department of Transportation
Environmental Programs Branch
4201 E. Arkansas Ave.
Denver, CO 80222
FAX: (303)757-9445

FEDERAL HIGHWAY ADMINISTRATION/COLORADO DEPARTMENT OF TRANSPORTATION
SECTION 106 TRIBAL CONSULTATION INTEREST RESPONSE FORM

PROJECT: State Highway 402 Environmental Assessment

The Pawnee Nation of Oklahoma Tribe [(is) / is not] (**circle one**) interested in becoming a consulting party for the Colorado Department of Transportation project referenced above, for the purpose of complying with Section 106 of the National Historic Preservation Act and its implementing regulations (36 CFR 800). If your tribe will be a consulting party, please answer the questions below.

Signed: Alice Alexander, THPO
Name and Title

CONSULTING PARTY STATUS [36 CFR §800.2(c)(3)]
Do you know of any specific sites or places to which your tribe attaches religious and cultural significance that may be affected by this project?

(Yes) No If yes, please explain the general nature of these places and how or why they are significant (use additional pages if necessary). Locational information is not required.

Plains Woodland Sites nearby

SCOPE OF IDENTIFICATION EFFORTS [36 CFR §800.4(a)(4)]
Do you have information you can provide us that will assist us in identifying sites or places that may be of religious or cultural significance to your tribe?

(Yes) No If yes, please explain.

THE PAWNEE TRAVELED & CAMPED THROUGH THIS AREA - CPT..

CONFIDENTIALITY OF INFORMATION [36 CFR §800.11(c)]
Is there any information you have provided here, or may provide in the future, that you wish to remain confidential?

Yes (No) If yes, please explain.

Please complete and return this form within 60 days via US Mail or fax to:

Dan Jepson, Section 106 Native American Liaison
Colorado Department of Transportation
Environmental Programs Branch
4201 E. Arkansas Ave.
Denver, CO 80222
FAX: (303)757-9445

May 3, 2004

FEDERAL HIGHWAY ADMINISTRATION/COLORADO DEPARTMENT OF TRANSPORTATION
SECTION 106 TRIBAL CONSULTATION INTEREST RESPONSE FORM

PROJECT: State Highway 402 Environmental Assessment

The Rosebud Sioux Tribe (is) is not] (**circle one**) interested in becoming a consulting party for the Colorado Department of Transportation project referenced above, for the purpose of complying with Section 106 of the National Historic Preservation Act and its implementing regulations (36 CFR 800). If your tribe will be a consulting party, please answer the questions below.

Signed: Janet Thompson, Admin. Asst.
Name and Title

CONSULTING PARTY STATUS [36 CFR §800.2(c)(3)]
Do you know of any specific sites or places to which your tribe attaches religious and cultural significance that may be affected by this project?

Yes (No) If yes, please explain the general nature of these places and how or why they are significant (use additional pages if necessary). Locational information is not required.

SCOPE OF IDENTIFICATION EFFORTS [36 CFR §800.4(a)(4)]
Do you have information you can provide us that will assist us in identifying sites or places that may be of religious or cultural significance to your tribe?

Yes (No) If yes, please explain.

CONFIDENTIALITY OF INFORMATION [36 CFR §800.11(c)]
Is there any information you have provided here, or may provide in the future, that you wish to remain confidential?

Yes (No) If yes, please explain.

Please complete and return this form within 60 days via US Mail or fax to:

Dan Jepson, Section 106 Native American Liaison
Colorado Department of Transportation
Environmental Programs Branch
4201 E. Arkansas Ave.
Denver, CO 80222
FAX: (303)757-9445

Jepson, Daniel

From: George Daingkau [pastor04@sbcglobal.net] KIOWA TRIBE OF OKLAHOMA
Sent: Wednesday, May 12, 2004 9:23 PM
To: Jepson, Daniel
Subject: Impact studies

These tracts of eis, or ea is what I am consulting you about today.

State Hwy 402, US 287 to I 25; Larimer County, Colo.
I-25 Front Range EIS Adams,Boulder,Broomfield, Denver, Larimar and Weld Counties
Powers Boulevard EA, El Paso County. Colo.

Powers Boulevard under taking is an existing road? Construction on widening it out?
What unsurveyed areas are you taking about? What eis do you have now? What ROW does CDOT have to do improvements?
In talking with the Elders on this road, there would have been many sites but since the construction of past roads and hwy's many of the sites were destroyed and now they want to consult us? I think what they met was that if new reality would be disturbed out side of the ROW then there would need to be an on site visit made.

Front Range; The I-25 that is existing now does not provide enough road way? These substandard roads your talking about, does it mean pull-offs, road parks, rest area, loops, off and on ramps, and (4) four more lanes?
Kiowa is known to be in this area up and down the East range of Colorado, so there must be some sites along this corridor. In this study area are you or CDOT asking for Tribal monitors to help with this undertaking? The only answer I can give now is we want to be a consulting party.

State Hwy 402 US 287 to I-25; Yes we will become a consulting party when this project is underway.

Well Dan, hope this helps. About the signing of the PEIS is still in limbo because now I am told there are some discrepancies on our newly appointed vice-chairman, or if he can sign at all. Be safe, Rev. Daingkau

May 6, 2004

Granted

FEDERAL HIGHWAY ADMINISTRATION/COLORADO DEPARTMENT OF TRANSPORTATION
SECTION 106 TRIBAL CONSULTATION INTEREST RESPONSE FORM

PROJECT: State Highway 402 Environmental Assessment

The Southern Ute Indian Tribe Tribe [is / is not] **(circle one)** interested in becoming a consulting party for the Colorado Department of Transportation project referenced above, for the purpose of complying with Section 106 of the National Historic Preservation Act and its implementing regulations (36 CFR 800). If your tribe will be a consulting party, please answer the questions below.

Signed: Neil B. Cloud - NAGPRA Coor.
Name and Title

CONSULTING PARTY STATUS [36 CFR §800.2(c)(3)]
Do you know of any specific sites or places to which your tribe attaches religious and cultural significance that may be affected by this project?

Yes (No) If yes, please explain the general nature of these places and how or why they are significant (use additional pages if necessary). Locational information is not required.

SCOPE OF IDENTIFICATION EFFORTS [36 CFR §800.4(a)(4)]
Do you have information you can provide us that will assist us in identifying sites or places that may be of religious or cultural significance to your tribe?

(Yes) No If yes, please explain.

CONFIDENTIALITY OF INFORMATION [36 CFR §800.11(c)]
Is there any information you have provided here, or may provide in the future, that you wish to remain confidential?

Yes (No) If yes, please explain.

Please complete and return this form within 60 days via US Mail or fax to:

Dan Jepson, Section 106 Native American Liaison
Colorado Department of Transportation
Environmental Programs Branch
4201 E. Arkansas Ave.
Denver, CO 80222
FAX: (303)757-9445

FEDERAL HIGHWAY ADMINISTRATION/COLORADO DEPARTMENT OF TRANSPORTATION
SECTION 106 TRIBAL CONSULTATION INTEREST RESPONSE FORM

PROJECT: State Highway 402 Environmental Assessment

The Northern Arapaho Tribe [is / is not] (**circle one**) interested in becoming a consulting party for the Colorado Department of Transportation project referenced above, for the purpose of complying with Section 106 of the National Historic Preservation Act and its implementing regulations (36 CFR 800). If your tribe will be a consulting party, please answer the questions below.

Signed: William J. O'Hair - Historic Preservation Commissioner
EB
Name and Title

CONSULTING PARTY STATUS [36 CFR §800.2(c)(3)]
Do you know of any specific sites or places to which your tribe attaches religious and cultural significance that may be affected by this project?

(Yes) No If yes, please explain the general nature of these places and how or why they are significant (use additional pages if necessary). Locational information is not required.
will explain if need arises

SCOPE OF IDENTIFICATION EFFORTS [36 CFR §800.4(a)(4)]
Do you have information you can provide us that will assist us in identifying sites or places that may be of religious or cultural significance to your tribe?

(Yes) No If yes, please explain.
Same as above

CONFIDENTIALITY OF INFORMATION [36 CFR §800.11(c)]
Is there any information you have provided here, or may provide in the future, that you wish to remain confidential?

(Yes) No If yes, please explain.

Please complete and return this form within 60 days via US Mail or fax to:

Dan Jepson, Section 106 Native American Liaison
Colorado Department of Transportation
Environmental Programs Branch
4201 E. Arkansas Ave.
Denver, CO 80222
FAX: (303)757-9445

LARIMER COUNTY
COMMITTED TO EXCELLENCE

ENGINEERING DEPARTMENT

Post Office Box 1190
Fort Collins, Colorado 80522-1190

(970) 498-5700
FAX (970) 498-7986

May 21, 2004

Rex Cantrell
Department of Transportation
Region 4 – Loveland Residency
2207 East Highway 402
Loveland, CO 80537

Re: SH 402 Environmental Assessment; SH 402 and CR 9E Intersection Design Memo

Rex,

We are in receipt of the SH 402 and CR 9E Intersection Design Memo, dated May 12, 2004. It is our understanding that you are requesting that we provide a letter that either supports or does not support the proposed conceptual alignment that is shown on the aerial photograph that is attached to the memo.

After reviewing the alignment, we agree that this would be a positive improvement to the intersection. Based on the last proposed cross section of SH 402 that we saw, we are assuming that a deceleration lane and left turn lane will be part of the striping plan for east bound SH 402 to north bound CR 9E traffic.

CR 9E is functionally classified as a minor collector and the improvements that you are proposing will not impact the classification or conflict with our current Transportation Master Plan.

We would appreciate it if you would keep us informed as the design progresses so that we can have the opportunity to review the plans. Please route all correspondence to me. Thank you for keeping us informed on the proposed change.

If you have any questions please give me a call at 498-5730.

Sincerely,

Rusty McDaniel, P.E.
Assistant County Engineer

f:\misc\cdot sh 402 .doc

CITY OF LOVELAND
PUBLIC WORKS
PROJECT ENGINEERING
410 East Fifth Street • Loveland, Colorado 80537
(970) 962-2627 • FAX (970) 962-2903 • TDD (970) 962-2620
www.ci.loveland.co.us

May 21, 2004

Mr. Rex Cantrell, P.E.
Colorado Department of Transportation
Region 4 – Loveland Residency
2207 East Highway 402
Loveland, Colorado 80537

Re: SH 402 and CR 9E Intersection

Dear Rex:

The City of Loveland has reviewed the SH 402 and CR 9E Realignment Alternative dated 5/12/2004. Based on that review, we offer the following:

- The proposed alternative is consistent with the information that the City has been provided and the process to date relative to the SH 402 Environmental Assessment project currently underway;
- The proposed alternative does not conflict with the City's 2020 Transportation Plan;
- The City proposed alternative meets or exceeds City standards for the classification of CR 9E (2 lane arterial); and
- The proposed alternative would greatly improve the safety of the intersection by removing the acute angle that CR 9E currently intersects with SH 402

As a result of the above referenced information, the City of Loveland, by this letter, accepts the design and looks forward to working with CDOT as the proposed improvements move forward.

If you have any questions or comments, or need additional information, please do not hesitate to contact me at (970) 962-2514. Thank you.

Sincerely,

David W, Klockeman, PE
Engineering Manager

Cc: Dave DeBaere, Field Engineering Supervisor, City of Loveland

J.F. SATO AND ASSOCIATES
Consulting Engineers
Project Managers & Planners
5898 So. Rapp St. • Littleton, CO 80120 • (303) 797-1200 • FAX (303) 797-1187

May 24, 2004

Project File: 0173

Mr. Terry McKee
US Army Corps of Engineers
Denver Regulatory Office
9307 South Wadsworth Boulevard
Littleton, CO 80128-6901

Subject: Revisions to SH 402 Wetland Delineations

Dear Terry:

Based on the field inspections conducted on May 19, 2004, revisions to wetland delineations are as follows:

- Wetland number 1 has been removed from the delineations, based on the amount of upland vegetation and the lack of soil wetland characteristics indicating that hydrology is insufficient to support wetlands.
- The boundary of wetland number 3 (adjacent to wetland No. 2) is narrowed based on vegetation and soils parameters (map attached).
- The boundary of wetland number 4 is extended slightly on the west side near the road to encompass an area that was inundated by surface water (map attached).
- Irrigation Ditch A was added to the mapping, and a data sheet on wetland characteristics was completed (map and data sheet attached)
- The wetland 5A boundary was offset on the map from where the wetlands occur along the river, and this was adjusted on the maps (map attached).

Please contact me if you have any questions on these revisions.

Your field review of the delineations is appreciated.

Sincerely,

Loren Hettinger

Loren Hettinger, PhD
Wetland Scientist

cc: Jim Eussen/Carol Parr - CDOT, Region 4
Amy Baerenklau - J.F. Sato & Associates
Michelle Li - J.F. Sato & Associates

Irrigation Ditch 'A' unnamed – drains toward By Thompson R.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: State Highway 402
Applicant/Owner: CDOT - Region 4
Investigator: Hoffmeier / O

Date: 5-19-04
County: Larimer
State: CO

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situation)? (Yes) No
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.) Irrigation Ditch

Community ID:
Transect ID:
Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Carex emoryi	H	FACW
2. Phalaris arundinacea (Reed canary)	H	FACW
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: Wetland ~ 3' at edge of flow channel on both banks

HYDROLOGY

___ Recorded Data (Describe In Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 1-2" (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Flowing ditch

Irrigation Ditch A

SOILS

Map Unit Name (Series and Phase): Carrizo Clay Loam

Drainage Class: Poor

Taxonomy (Subgroup):

Field Observations
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

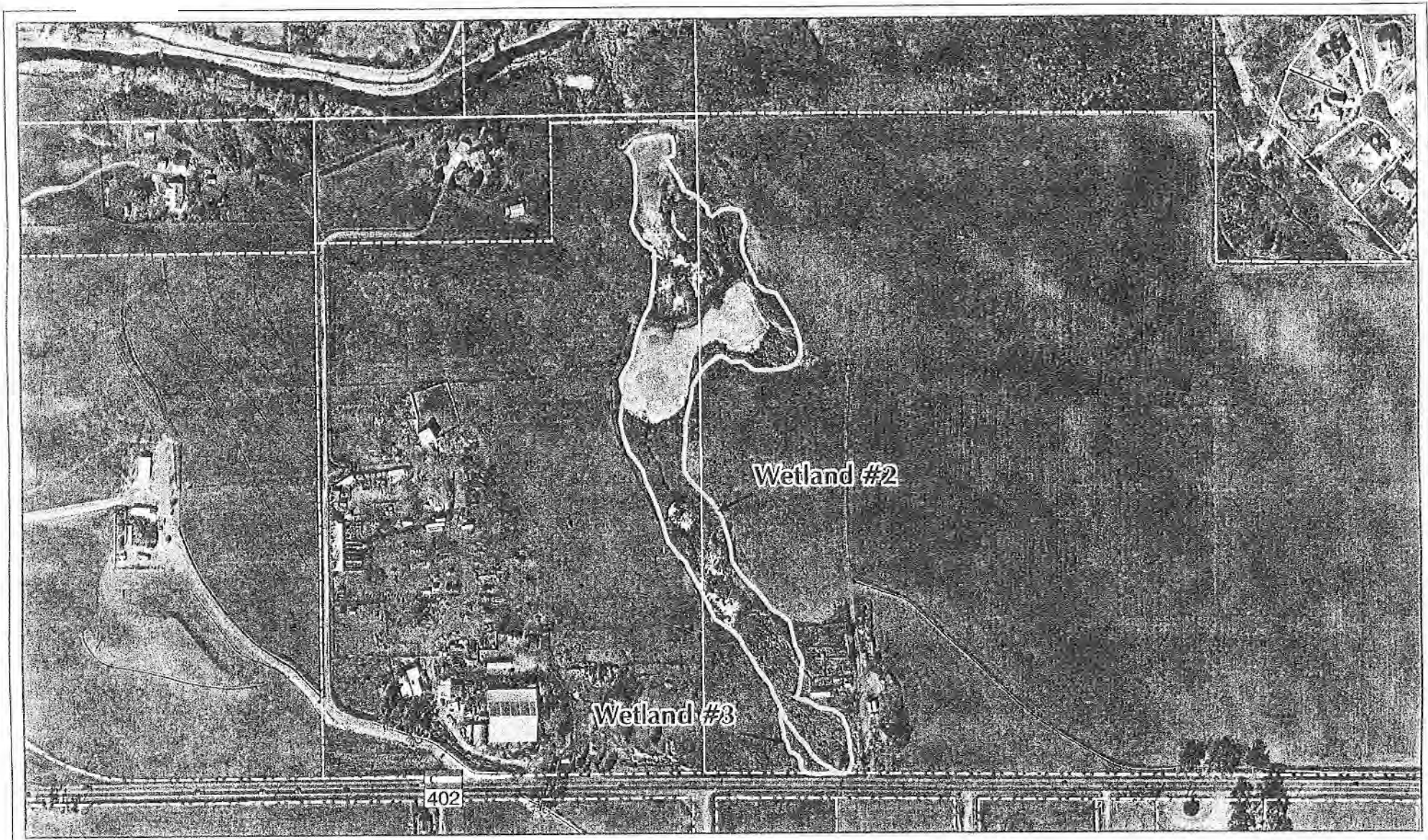
Remarks: Note - Saturated soil in conjunction with flow in ditch - 2-3" width from water onto bank.

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes No (Circle)	(Circle)
Wetland Hydrology Present?	Yes No	
Hydric Soils Present?	Yes No	Is this Sampling Point Within a Wetland? Yes No

Remarks: Irrigation ditch.

Approved by HQUSACE 2/92



LEGEND

Wetland Boundary

N
W E
S

SCALE - 1:4,200 or 1" = 350'

0 100 200 Meters

0 250 500 Feet

SOURCE: 2000 aerial photography provided by Airphoto USA / KRPS. Land use and parcel information provided by the City of Loveland. Wetland information obtained through field observation and aerial photo interpretation by JFSA. Map produced August 1, 2003 by JFSA.

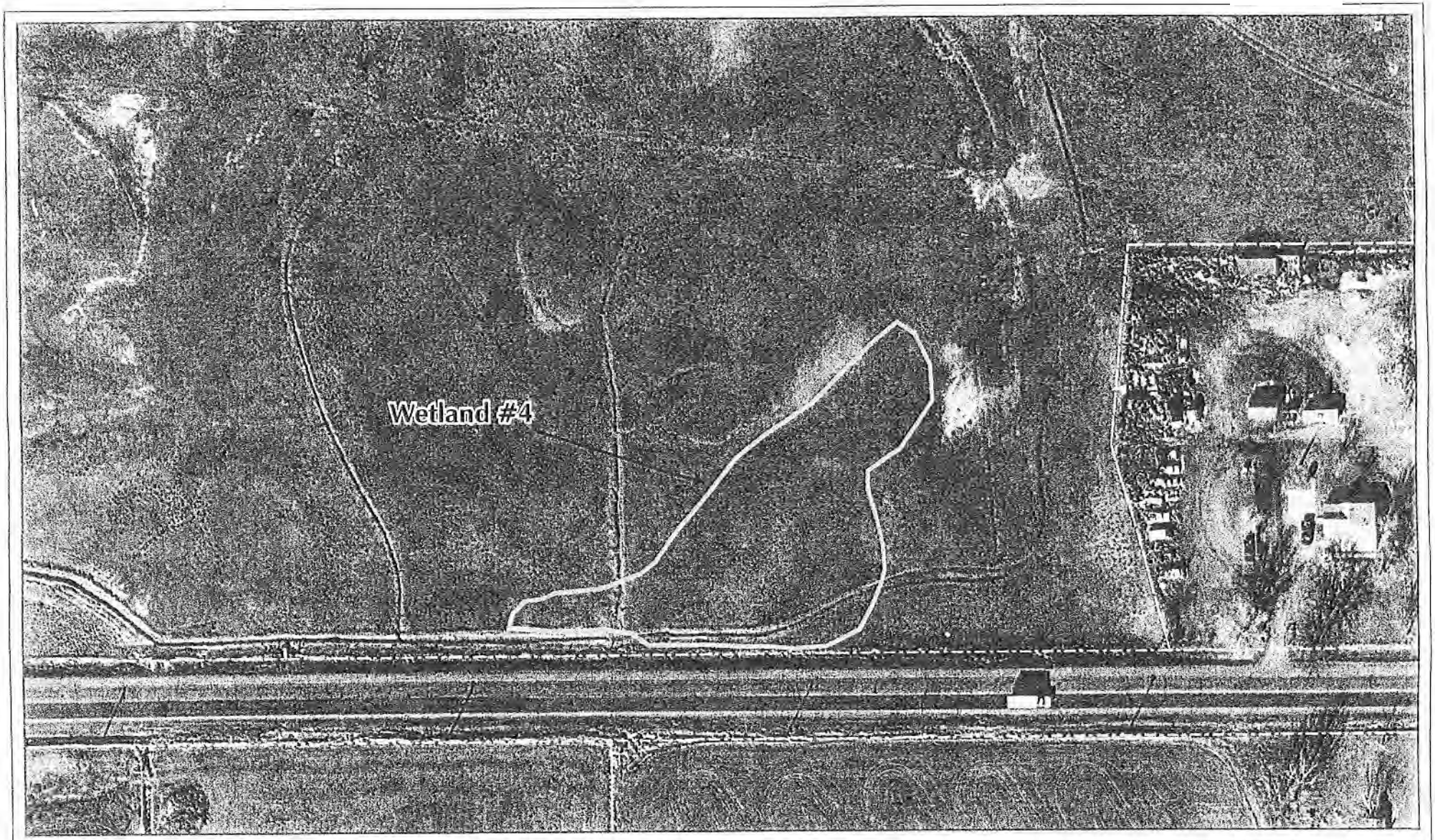
JFSA

DOT

SH 402

State Highway 402

Wetlands 2 and 3



LEGEND

Wetland Boundary

N
W E
S

SCALE - 1:1,200 or 1" = 100'

0 25 50 Meters

0 75 150 Feet

SOURCE: 2000 aerial photography provided by Airphoto USA / KRPS. Land use and parcel information provided by the City of Loveland. Wetland information obtained through field observation and aerial photo interpretation by JFSA. Map produced August 1, 2003 by JFSA.

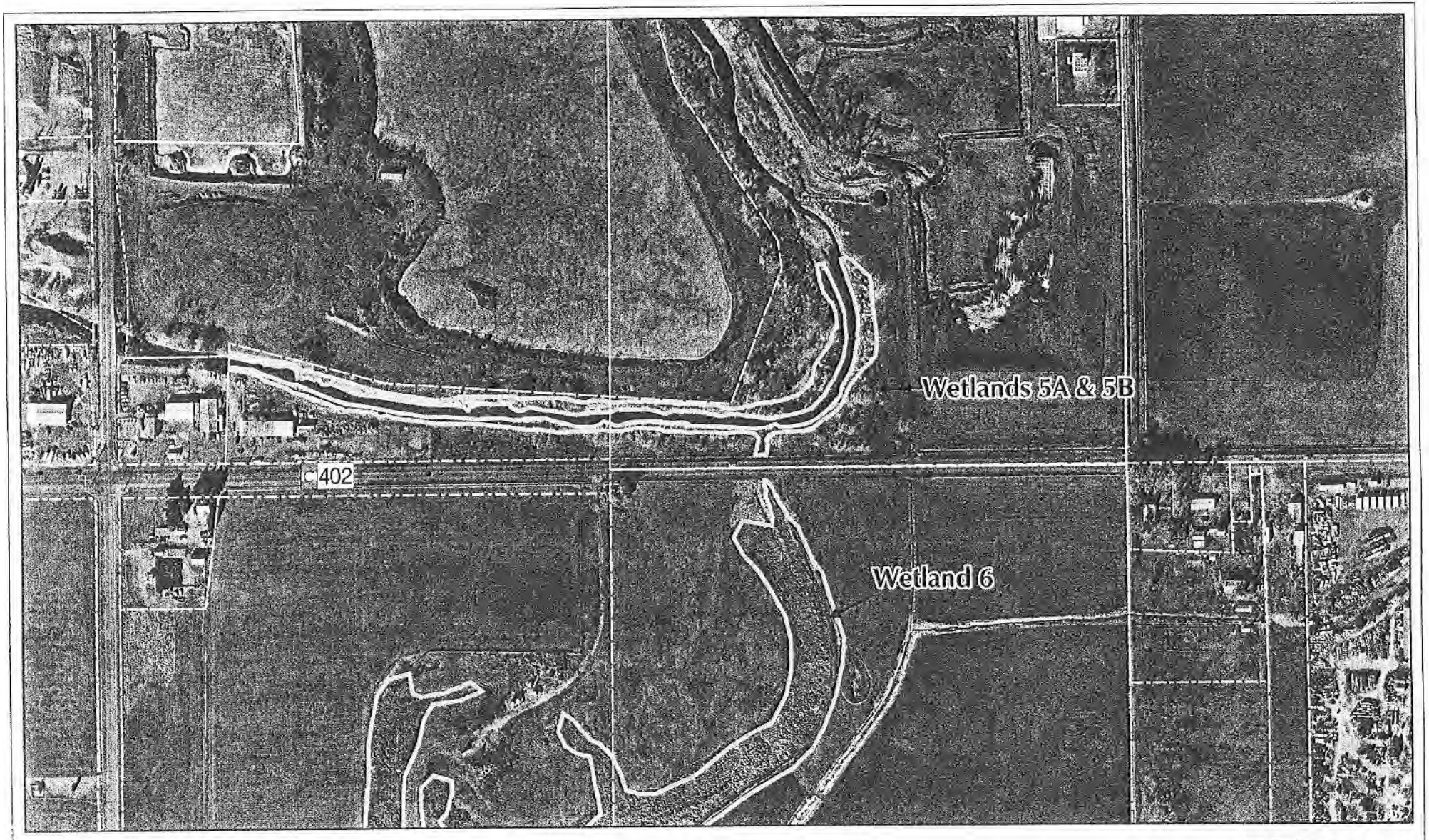
JFS
JESMO AND ASSOCIATES

DOT

SH 402

State Highway 402

Wetland #4



LEGEND

Wetland Boundary

N
W E
S

SCALE - 1:4,200 or 1" = 350'

0 100 200 Meters

0 250 500 Feet

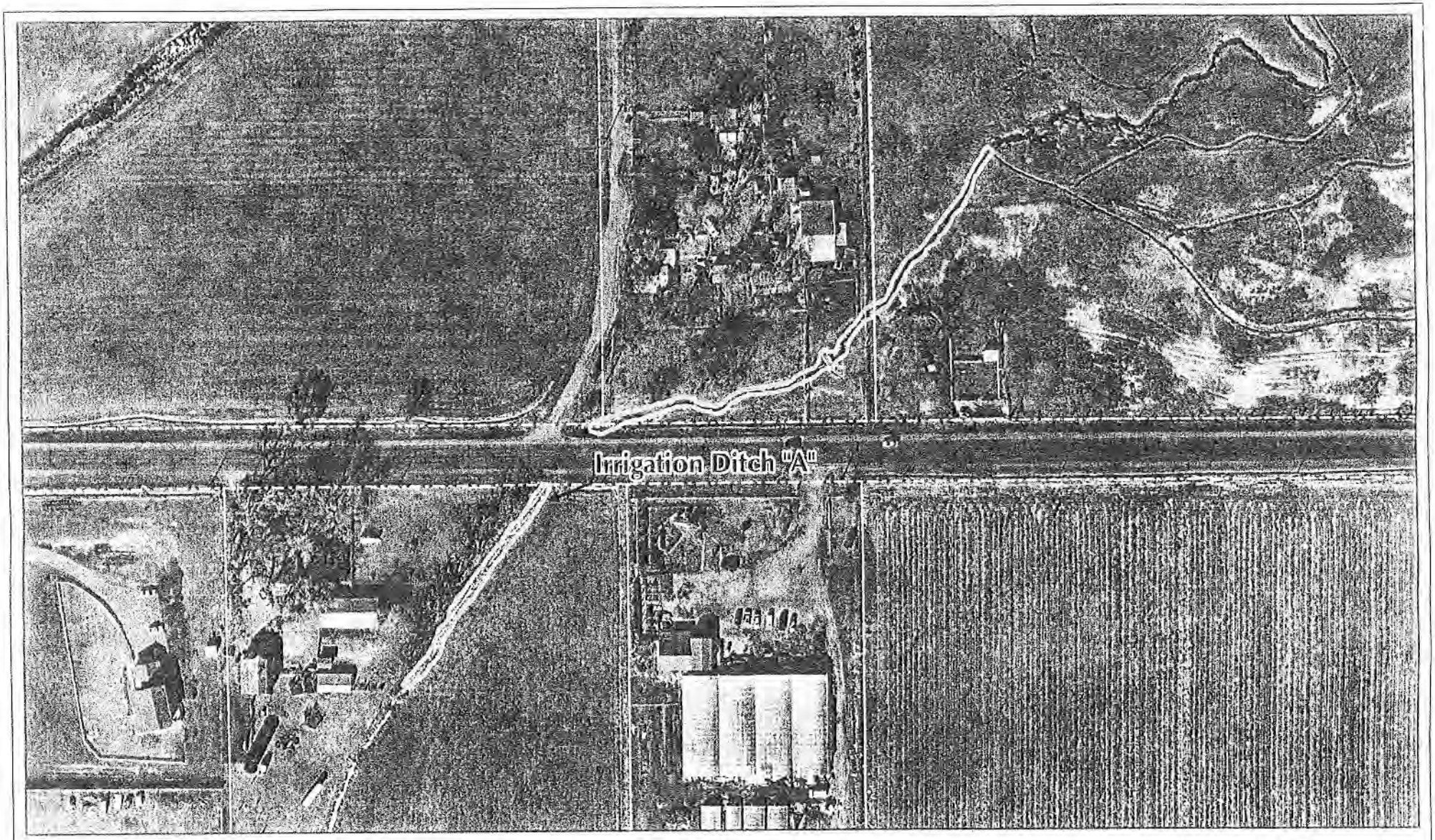
SOURCE: 2000 aerial photography provided by Airphoto USA / KRPS. Land use and parcel information provided by the City of Loveland. Wetland information obtained through field observation and aerial photo interpretation by JFSA. Map produced August 1, 2003 by JFSA.

DOT

DOT SH 402

State Highway 402

Wetlands 5 and 6



LEGEND

Wetland Boundary

N
W E
S

SCALE - 1:1,200 or 1" = 100'

0 25 50 Meters

0 75 150 Feet

SOURCE: 2000 aerial photography provided by Airphoto USA / KRPS. Land use and parcel information provided by the City of Loveland. Wetland information obtained through field observation and aerial photo interpretation by JFSA. Map produced August 1, 2003 by JFSA.

DOT

SH 402

State Highway 402

Irrigation Ditch "A"

JFS&A
J. F. SATO AND ASSOCIATES

Engineering, Environmental, and Program Management Services
5898 South Rapp Street • Littleton, CO 80120
Phone 303.797.1200 • Fax 303.797.1187
www.jfsato.com

June 16, 2004

Todd Boldt
District Conservationist
US Department of Agriculture
Natural Resource Conservation Service
Fort Collins Field Office
2150 Centre Ave Bldg A, Suite 116
Fort Collins, CO 80526

Re: SH 402 – SH 287 to I-25 Project AD 1006 form update

Dear Mr. Boldt:

Per our phone conversation today, I have amended the AD 1006 form that was submitted to your office in October 2003 to show the increase in project impact to 29.6 acres. Most of the increase is due to the addition of a twenty-five foot utility corridor. Per the attached map, all of this acreage is from prime farmland soil types. Also per our conversation, the Loveland Land Use plan shows the entire SH 402 as a location for future urban development (residential, commercial, employment) perhaps making the AD 1006 and FPPA not applicable. Please keep this informational update and transmittal in the appropriate project file. At this time it is my understanding that no further action is needed. Thanks for your help.

Sincerely,

Joanna Morsicato
Senior Project Manager

Attachment

CC: Carol Parr, CDOT R-4, Environmental Manager
Michelle Li, JFS&A, Project Manager
Amy Baerenklau, JFS&A
Admin File

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request 10/27/03 06/16/04 update
Name Of Project SH 402 Road Improvements		Federal Agency Involved FHWA
Proposed Land Use Road widening and ROW		County And State Larimer County, Colorado
PART II *(To be completed by NRCS)*		Date Request Received By NRCS 10/27/03
Does the site contain prime, unique, statewide or local important farmland? *(If no, the FPPA does not apply – do not complete additional parts of this form)*	Yes ☑ No ☐	Acres Irrigated 80,310 / Average Farm Size 240 ac
Major Crop(s) Corn, Beans, Alfalfa	Farmable Land In Govt. Jurisdiction Acres: 114,100 % 7	Amount Of Farmland As Defined in FPPA Acres: 75,250 % 5
Name Of Land Evaluation System Used LESA	Name Of Local Site Assessment System Larimer County Assmntsys1.1	Date Land Evaluation Returned By NRCS 11/20/03

PART III *(To be completed by Federal Agency)*	Meander Alt Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	16.6			
B. Total Acres To Be Converted Indirectly	13.0			
C. Total Acres In Site	29.6	0.0	0.0	0.0
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	27.9			
B. Total Acres Statewide And Local Important Farmland	1.7			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.0			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	27.3			
PART V *(To be completed by NRCS)* Land Evaluation Criterion Relative Value Of Farmland To Be Converted *(Scale of 0 to 100 Points)*	90	0	0	0

PART VI *(To be completed by Federal Agency)* Assessment Criteria *(These criteria are explained in 7 CFR 658.5(b)*	Maximum Points				
1. Area In Nonurban Use					
2. Perimeter In Nonurban Use					
3. Percent Of Site Being Farmed					
4. Protection Provided By State And Local Government					
5. Distance From Urban Builtup Area					
6. Distance To Urban Support Services					
7. Size Of Present Farm Unit Compared To Average					
8. Creation Of Nonfarmable Farmland					
9. Availability Of Farm Support Services					
10. On-Farm Investments					
11. Effects Of Conversion On Farm Support Services					
12. Compatibility With Existing Agricultural Use					
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII *(To be completed by Federal Agency)*					
Relative Value Of Farmland *(From Part V)*	100	90	0	0	0
Total Site Assessment *(From Part VI above or a local site assessment)*	160	123.2	0	0	0
TOTAL POINTS *(Total of above 2 lines)* LESA	260	213.2	0	0	0

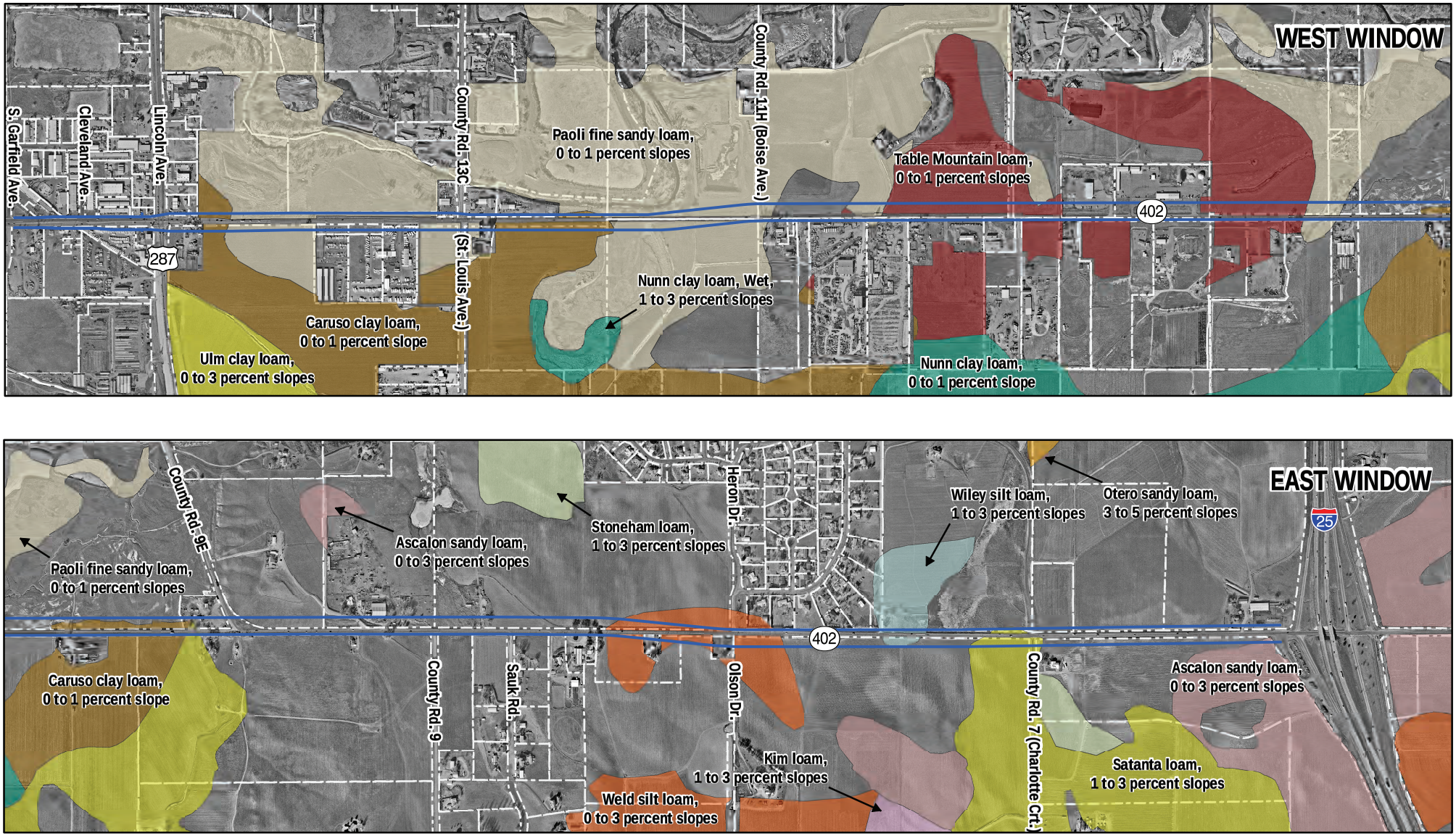
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes ☑ No ☐

Reason For Selection:

(See Instructions on reverse side)

Form AD-1006 (10-83)

This form was electronically produced by National Production Services Staff



LEGEND

- Ascalon sandy loam, 0 to 3 percent slopes
- Caruso clay loam, 0 to 1 percent slope
- Kim loam, 1 to 3 percent slopes
- Nunn clay loam, 0 to 3 percent slopes
- Otero sandy loam, 3 to 5 percent slopes
- Paoli fine sandy loam, 0 to 1 percent slopes
- Satanta loam, 1 to 5 percent slopes
- Stoneham loam, 0 to 3 percent slopes
- Table Mountain loam, 0 to 1 percent slopes
- Ulm clay loam, 0 to 3 percent slopes
- Weld silt loam, 0 to 3 percent slopes
- Wiley silt loam, 1 to 3 percent slopes
- Meander Alternative Right-of-Way

N W E S

0 500 1,000
Feet

SCALE - 1:14,700
or 1" = 1225'

SOURCE: 2001 1/2-foot resolution aerial photography. Land use and parcel information provided by the City of Loveland. Prime farmland soil information provided by NRCS. Map produced August 1, 2003 by JFSA.

U.S. Department of Transportation Federal Highway Administration

DOT DEPARTMENT OF TRANSPORTATION

DOT SH 402 Environmental Assessment

Project Study Area
Prime Farmland Soil Types

FIGURE 3-8

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Environmental Programs Branch
4201 East Arkansas Avenue
Denver, Colorado 80222
(303) 757-9259

DEPARTMENT OF TRANSPORTATION

September 27, 2004

Ms. Georgianna Contiguglia
State Historic Preservation Officer
Colorado Historical Society
1300 Broadway
Denver, CO 80203

SUBJECT: Determinations of Eligibility, Project STA 402A-003, US 287 to I-25 Environmental Assessment, Larimer County

Dear Ms. Contiguglia:

This letter and the enclosed inventory report constitute a request for concurrence on Determinations of Eligibility for the transportation project referenced above. The project proposes improvements to State Highway 402 from US Highway 287 east to Interstate 25 in Larimer County, a distance of four miles.

PROJECT BACKGROUND

State Highway 402 is a two-lane, east-west arterial connecting US 287 (also known as Lincoln Avenue in Loveland) to Interstate 25. The project area involves private, state and Larimer County lands on either side of the existing highway. The proposed expansion will improve mobility and safety, and address the highway's substandard design that presently includes no turn lanes, narrow shoulders and poor sight distances.

AREA OF POTENTIAL EFFECT (APE) AND METHODOLOGY

The Area of Potential Effect (APE) established for the project is located on both sides of the highway 402 between I-25 on the east and US 287 on the west, and varies from 125 to 500 feet in width from the edge of existing right-of-way.

Western Cultural Resources Management, Inc. (WCRM) conducted the file search and survey for the project. Due to right-of-entry access issues, only 21 acres of the 60-acre APE was surveyed. Much of the survey area has recently been impacted by ground disturbance and various types of construction. Undisturbed areas requiring survey will be inventoried at a Class III level once access has been granted later in the NEPA documentation process. Please refer to the report for additional details regarding the methodology used during the survey.

SURVEY RESULTS

Six historic resources were recorded and evaluated within the 21 acres accessible to the surveyors. Four of the resources (5LR1729.3, 5LR17023, 5LR10726 and 5LR10727) were surveyed at a Class III level. The survey team was unable to gain permission from respective landowners to survey two historic

resources (5LR10724 and 5LR10725), and both properties were therefore recorded from the curbside. The following table describes these NRHP-eligible properties:

Historic Properties in the Study Area

Site No.	Address/Location	Description	Year Built/Constructed	Eligibility Determination
5LR1729.3	T5N, R68W, Section 20 SE/SE/ SW/SW¼.	Big Thompson Feeder Ditch Segment	Unknown	Not Eligible
5LR10723	4462 SE 14th Street, Loveland	Olson House	1910	Not Eligible
5LR10724	3363 SE 14th Street, Loveland	Bentley House	1896	Not Eligible
5LR10725	3064 SE 14th Street, Loveland	Weber House	1911	Not Eligible
5LR10726	T5N, R68W, Section 19 S of S½, SE/SW/SW¼ T5N, R68W, Section 30 NW/ NE/NW/NW¼.	Unnamed Ditch Segment (150 ft.)	Unknown	Not Eligible
5LR10727	T5N, R68W, Section 21, S½ of SW¼.	Unnamed Ditch Segment (1,650 ft.)	Unknown	Not Eligible

ELIGIBILITY DETERMINATIONS

None of these sites exhibit unique characteristics, nor are they associated with significant historic events or individuals. In addition, 5LR10723, 5LR10724 and 5LR10725 possess little remaining physical integrity. Therefore, CDOT has determined that these resources are *not eligible* for listing on the NRHP.

We request your concurrence with the Determinations of Eligibility outlined herein and in the enclosed report. Your response is necessary for the Federal Highway Administration's compliance with Section 106 of the National Historic Preservation Act (as amended) and with the Advisory Council on Historic Preservation's regulations.

If you have questions or require additional information in order to complete your review, please contact CDOT Senior Staff Historian Lisa Schoch at (303) 512-4258.

Very truly yours,

for Brad Beckham, Manager
Environmental Programs Branch

Enclosures: Survey Report and Site Forms

cc: Carol Parr, CDOT Region 4
Joanna Morsicato, J.F. Sato and Associates
Greg George, Loveland Historic Preservation Commission

COLORADO
HISTORICAL
SOCIETY

The Colorado History Museum 1300 Broadway Denver, Colorado 80203-2137

September 30, 2004

Brad Beckham
Manager, Environmental Programs Branch
Colorado Department of Transportation
Department of Transportation
Environmental Programs Branch
4201 East Arkansas Avenue
Denver, CO 80222

Re: CDOT Project STA 402A-003, Determination of Eligibility for SH 402 from US 287 to I-25 Larimer CO. (CHS #37440)

Dear Mr. Beckham,

Thank you for your correspondence dated September 27, 2004 and received by our office on September 29, 2004 regarding the above-mentioned project. We understand that this is only a partial survey of the project and that a final survey will be submitted to our office at a later date for review and comment.

After review of the submitted information regarding the Area of Potential Effect (APE), we are not able to concur with the proposed APE. In your cover letter, you state that the APE varies from 125 to 500 feet in width from the edge of the existing right-of-way. However, no justification for the 125- to 500-foot APE is provided. As defined in 36 CFR 800.16(d), the APE is the "geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of the historic properties, if any such historic properties exist." Does the proposed 125- to 500-foot APE include the possible indirect effects, such as visual effects, related to the proposed project? Please provide a project map showing the boundaries of the APE.

After review of the submitted information, we concur with your finding that the resources listed below are *not eligible* for the National Register of Historic Places.

- 5LR.10723
- 5LR.10724

We were unable to complete our National Register review of the following resources listed below.

- 5LR.1729.3
- 5LR.10725
- 5LR.10726
- 5LR.10727

We are unable to complete our review of resource 5LR.10725, the Weber House, because there are no photographs of the building attached to the survey form. In order for us to complete our review, please provide photographs of the building. Also, the historic boundary recorded on the survey form for this property, as well as the other buildings in the survey, is restricted to the footprint of the building. Typically, the footprint of a building does not mark the historic boundary of a building. A building exists within a setting and, if the setting or a portion of the setting retains historic significance and integrity, that setting should be included within the proposed historic boundary for the building. Typically, the property boundary or parcel marks the historic boundary for a property. Please refer to *National Register Bulletin 21: Defining Boundaries for National Register Properties* for further guidance on determining historic boundaries.

We are unable to complete our review for resources 5LR.1729.3, 5LR.10726, and 5LR.10727. All three resources are linear segments of a ditch/canal. The survey forms record only the sections of the ditch/canal that are located within the right-of-way, and in some cases, only on the side of the highway in which the ditch/canal may be affected by the project. In our opinion, the recorded segments are too short to evaluate for National Register eligibility. In order for us to complete our review, please survey the ditch/canal segments beyond the right-of-way so that we may evaluate the segments within a larger context. Whereas the area within the right-of-way may have a lesser degree of historic integrity, the area right outside the right-of-way may retain historic integrity. Enough of the ditch/canal must be surveyed so that the overall integrity of the ditch/canal can be evaluated.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings.

If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

Georgianna Contiguglia
State Historic Preservation Officer

cc: Lisa Schoch/CDOT

CITY OF LOVELAND
LONG RANGE PLANNING
Civic Center • 500 East Third • Loveland, Colorado 80537
(970) 962-2346 • FAX (970) 962-2903 • TDD (970) 962-2620

October 6, 2004

Mr. Brad Beckham
Environmental Programs Branch
Colorado Dept. of Transportation
4201 East Arkansas Ave
Denver, CO 80222

RE: Section 106 Review for Project STA 202A-003, US287 to I-25 Environmental Assessment, Larimer County

Mr. Beckham:

This letter is in response to a request from the Colorado Department of Transportation to provide Section 106 comments on proposed improvements to State Highway 402 from US Highway 287 east to Interstate 25 in Larimer County, a distance of four miles.

The City of Loveland Long Range Planning Division reviewed its records, and the cultural resources inventory prepared by Western Cultural Resource Management Inc. for the proposed improvements to State Highway 402, and concurs that the proposed work will have no adverse effect on the following properties in the project area:

- Site No. 5LR1729.3 Big Thompson Feeder Ditch Segment
- Site No. 5LR10723 Olson House
- Site No. 5LR10724 Bentley House
- Site No. 5LR10726 Unnamed Ditch Segment (150ft)
- Site No. 5LR10727 Unnamed Ditch Segment (1,650 ft)

Additionally, the Long Rang Planning Division reviewed available information provided for Site No. 5LR10725 (Weber House), and at this time we cannot provide an informed opinion to support the assertion that there will not be an adverse effect on this property from the proposed work.

According to the text presented on page 27 of the cultural resource inventory report, direct access to Site No. 5LR10725 was not available to the consultants performing the field observations. The Management Data Form prepared for this property indicates that no photographs could be taken of the subject because the house is obscured from the road by vegetation. It is not clear how Western Cultural Resource Management Inc. was able to adequately evaluate the property and assess that this house possesses little remaining physical integrity if there is currently an obscured view of the house and the consultant staff was not able to physically access the property to make observations.

If you have questions regarding these comments, please contact me at 970-962-2577.

Sincerely,

Matt Robenalt
Senior Planner

Cc: Greg George, Community Services Director

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Environmental Programs Branch
4201 East Arkansas Avenue
Denver, Colorado 80222
(303) 757-9259

DEPARTMENT OF TRANSPORTATION

December 9, 2004

Mr. Matt Robenalt, Senior Planner
City of Loveland/Long Range Planning
Civic Center
500 East Third
Loveland, CO 80537

SUBJECT: Section 106 Review for CDOT Project STA 402A-003, State Highway 402, US 287 to I-25 Environmental Assessment, Larimer County

Dear Mr. Robenalt:

This letter is in response to your comments of October 6, 2004, regarding the Section 106 process for the CDOT project referenced above. We appreciate your concurrence with our findings that the project will have *no adverse effect* to the following sites: Big Thompson Feeder Ditch Segment (5LR1729.3), Olson House (5R10723), Bentley House (5LR10724), 150-foot unnamed ditch segment (5LR10726) and 1,650-foot unnamed ditch segment (5LR10727).

In response to your question regarding the documentation of the Weber House (5LR10725), we have enclosed photographs of the property supporting our determination that 5LR10725 is *not eligible* to the National Register of Historic Places. The photos illustrate the present integrity of the structure (or lack thereof) and clarify our determination. We have sent the same photos to the Colorado Office of Archaeology and Historic Preservation (OAHP) to complete their review of this resource.

Thank you again for your response. If you require additional information, please contact CDOT Senior Staff Historian Lisa Schoch at (303) 512-4258.

Very truly yours,

for Brad Beckham, Manager
Environmental Programs Branch

Enclosures: photos of 5LR10725

cc: Carol Parr, CDOT Region 4
Joanna Morsicato, JF Sato & Associates
File/RF/CF

5LR10725 Weber House looking north/northeast.

5LR10725 Weber house closeup, looking north/northeast.

5LR10725 Weber house outbuildings, looking east.

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Environmental Programs Branch
4201 East Arkansas Avenue
Denver, Colorado 80222
(303) 757-9259

DEPARTMENT OF TRANSPORTATION

May 23, 2005

Ms. Georgianna Contiguglia
State Historic Preservation Officer
Colorado Historical Society
1300 Broadway
Denver, CO 80203

SUBJECT: CDOT Project STA 402A-003, Improvements to State Highway 402 from US 287 to I-25, Larimer County

Dear Ms. Contiguglia:

Thank you for your correspondence dated September 30, 2004 in which you sought additional information for the above-mentioned project. Enclosed is the information you requested including a revised cultural resources inventory report and site forms.

Area of Potential Effect and Projected Indirect Effects

In your September 30, 2004 letter, you disagreed with the proposed Area of Potential Effect (APE) described in the survey report. CDOT reestablished the APE's width to 200 feet on either side of the existing highway right-of-way. Project related impacts are not expected to extend beyond the APE. Construction will require acquisition of approximately sixty acres — roughly within 50 to 200 feet from the edge of the existing right-of-way. Direct disturbances from this project will be contained within the right-of-way and associated permanent easements.

You also sought clarification regarding whether the proposed APE accounts for possible indirect effects related to the project. With regard to potential visual effects, construction is scheduled within an area of relatively open views from dispersed rural residences and existing developments. With the exception of the widened highway and grading associated with cut-and-fill slopes, project plans include few new structural elements. In the boundaries of the project area's relatively flat terrain, most of the visual effects will occur adjacent to the existing SH 402 and within the defined APE.

Additional Information on Linear Resources

Your office was unable to complete a review of linear resources 5LR1729.3, 5LR10726, and 5LR10727, because the initial survey recorded a limited segment of each feature. We have resurveyed these ditch/canal segments beyond the right-of-way and re-evaluated their potential eligibility within a larger historic context. The following identifies these features with their new Office of Archaeology and Historic Preservation (OAHP) site numbers:

- 5LR1729.3 – Big Thompson Feeder Ditch segment is now 5LR10726.1
- 5LR10726 – Unnamed ditch segment is now 5LR10726.2 (The unnamed segment is now referred to in the report as the Big Thompson Manufacturing Ditch).

• 5LR10727 – Unnamed ditch segment is now 5LR1709.2 (The unnamed segment is now referred to in the report as the lateral segment of the Home Supply Ditch).

Additional information on the Weber House (5LR10725)

Included are photographs you requested of the Weber House (5LR10725). The recordation has also been revised in response to your concerns over the initial description of the historic boundaries of 5LR10725.

Methodology and Re-Evaluated Resources

In September 2003, the consultant Western Cultural Resources Management (WCRM) conducted a Class III cultural resource survey of the proposed project area. Because certain property owners denied access to WCRM, the survey recorded only 21 out of 90 acres of the entire APE and left out two potentially historic properties from the survey submitted to your office in September 2004. After a December 16, 2004 discussion with Dale Heckendorn of OAHP, it was agreed that WCRM would examine the Smith Homestead (5LR829) and the Osborn Farm (5LR1143) at a reconnaissance level to determine their potential NRHP eligibility. The survey found that the Smith Homestead had been completely altered and the balance of the original standing structures displayed no historic integrity or significant associations. In addition, there are no historic features or structures left standing on the Osborn Farm. Site forms for both the Smith Homestead and the Osborn Farm are attached for your review.

Subsequent to the September 2004 submission to your office, a review of properties in the vicinity of the APE uncovered an additional site — the Notman/Rust homestead (5LR1703) — requiring re-evaluation. CDOT conducted the initial survey of the Notman/Rust homestead (5LF1703) in 1993 and the property was determined officially *not eligible* to the National Register of Historic Places (NRHP). A re-evaluation of this property is also included in this submittal.

Eligibility Determinations

FHWA and CDOT have determined that the following properties are *not eligible* to the National Register of Historic Places. Please refer to the report and site forms for additional detail:

5LR829 (Smith Homestead)
5LR1143 (Osborn Farm)
5LR1703 (Notman/Rust Property)
5LR1709.2 (Lateral segment of the Home Supply Ditch)
5LR10723 (Olson House)
5LR10724 (Bentley House)
5LR10725 (Weber House)
5LR10726.1 (Big Thompson Feeder Ditch segment)
5LR10726.2 (Big Thompson Manufacturing Ditch segment)

We hereby request your concurrence with the determinations of eligibility outlined herein and in the enclosed report. Your response is necessary for the Federal Highway Administration's compliance with Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's regulations.

Thank you in advance for your prompt attention to this matter. If you require additional information, please contact CDOT Senior Staff Historian Lisa Schoch at (303) 512-4258.

Very truly yours,

Brad Beckham, Manager
Environmental Programs Branch

Enclosures: Survey Report and Site Forms

cc: Carol Parr, CDOT Region 4
Joanna Morsicato, J.F. Sato and Associates

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Environmental Programs Branch
4201 East Arkansas Avenue
Denver, Colorado 80222
(303) 757-9259

DEPARTMENT OF TRANSPORTATION

May 24, 2005

Mr. Matt Robenalt
Senior Planner
City of Loveland/Long Range Planning
500 East Third
Loveland, CO 80537

SUBJECT: CDOT Project STA 402A-003, Improvements to State Highway 402 from US 287 to I-25, Larimer County

Dear Mr. Robenalt:

This letter and the attached materials constitute FHWA and CDOT's request for comment on additional information associated with the project referenced above. We initially contacted your office about this project in September 2004. Since then, we have revised the Area of Potential Effects (APE), re-evaluated some properties within the project area, and revised the original survey report. Some of the information below is in response to requests from the State Historic Preservation Officer (SHPO).

Area of Potential Effect and Projected Indirect Effects

Based on comments from the SHPO in September 2004, CDOT has revised the APE's width to 200 feet on either side of the existing highway right-of-way. Project related impacts are not expected to extend beyond the APE. Construction will require acquisition of approximately sixty acres — roughly within 50 to 200 feet from the edge of the existing right-of-way. Direct disturbances from this project will be contained within the right-of-way and associated permanent easements.

The SHPO also sought clarification regarding whether the proposed APE accounts for possible indirect effects related to the project. With regard to potential visual effects, construction is scheduled within an area of relatively open views from dispersed rural residences and existing developments. With the exception of the widened highway and grading associated with cut-and-fill slopes, project plans include few new structural elements. In the boundaries of the project area's relatively flat terrain, most of the visual effects will occur adjacent to the existing SH 402 and within the defined APE.

Additional Information on Linear Resources

In their response, the SHPO also requested additional information about some of the linear resources associated with the project (5LR1729.3, 5LR10726, and 5LR10727), because the initial survey recorded a limited segment of each feature. We have resurveyed these ditch/canal segments beyond the right-of-way and re-evaluated their potential eligibility within a larger historic context. The following identifies these features with their new Office of Archaeology and Historic Preservation (OAHP) site numbers:

- 5LR1729.3 – Big Thompson Feeder Ditch segment is now 5LR10726.1

- 5LR10726 – Unnamed ditch segment is now 5LR10726.2 (The unnamed segment is now referred to in the report as the Big Thompson Manufacturing Ditch).
- 5LR10727 – Unnamed ditch segment is now 5LR1709.2 (The unnamed segment is now referred to in the report as the lateral segment of the Home Supply Ditch).

Additional information on the Weber House (5LR10725)

We have also included new photographs of the Weber House (5LR10725). The recordation of this property has also been revised in response to the SHPO's concerns over the initial description of the historic boundaries.

Methodology and Re-Evaluated Resources

In September 2003, the consultant Western Cultural Resources Management (WCRM) conducted a Class III cultural resource survey of the proposed project area. Because certain property owners denied access to WCRM, the survey recorded only 21 out of 90 acres of the entire APE and left out two potentially historic properties from the survey submitted to your office in September 2004. After a December 16, 2004 discussion with Dale Heckendorn of OAHP, it was agreed that WCRM would examine the Smith Homestead (5LR829) and the Osborn Farm (5LR1143) at a reconnaissance level to determine their potential NRHP eligibility. The survey found that the Smith Homestead had been completely altered and the balance of the original standing structures displayed no historic integrity or significant associations. In addition, there are no historic features or structures left standing on the Osborn Farm. Site forms for both the Smith Homestead and the Osborn Farm are attached for your review.

Subsequent to the September 2004 submittal to your office, a review of properties in the vicinity of the APE uncovered an additional site — the Notman/Rust homestead (5LR1703) — requiring re-evaluation. CDOT conducted the initial survey of the Notman/Rust homestead (5LF1703) in 1993 and the property was determined officially *not eligible* to the National Register of Historic Places (NRHP) at that time. A re-evaluation of this property is also included in this submittal.

Eligibility Determinations

FHWA and CDOT have determined that the following properties are *not eligible* to the National Register of Historic Places. Please refer to the report and site forms for additional detail:

5LR829 (Smith Homestead)
5LR1143 (Osborn Farm)
5LR1703 (Notman/Rust Property)
5LR1709.2 (Lateral segment of the Home Supply Ditch)
5LR10724 (Bentley House)
5LR10725 (Weber House)
5LR10726.1 (Big Thompson Feeder Ditch segment)
5LR10726.2 (Big Thompson Manufacturing Ditch segment)

We request comment from the City of Loveland's Long Range Planning Office regarding these findings within 30 days of receipt of these materials. Your response is necessary for the Federal Highway Administration's compliance with Section 106 of the National Historic Preservation Act (as amended) and with the Advisory Council on Historic Preservation's regulations.

Thank you in advance for your prompt attention to this matter. If you require additional information, please contact CDOT Senior Staff Historian Lisa Schoch at (303) 512-4258.

Very truly yours,

FOR Brad Beckham, Manager
Environmental Programs Branch

Enclosures: Survey Report and Site Forms

cc: Carol Parr, CDOT Region 4
Joanna Morsicato, J.F. Sato and Associates

DEPARTMENT OF TRANSPORTATION

MEMORANDUM

Environmental Programs Branch
4201 East Arkansas Avenue
Denver, Colorado 80222
(303) 757-9259

DOT
DEPARTMENT OF TRANSPORTATION

June 24, 2005

Ms. Amy Pallante
Section 106 Compliance Officer
Colorado Historical Society
1300 Broadway
Denver, CO 80203

Dear Ms. Pallante:

Enclosed are two photographs of the Weber House (5LR10725) necessary for your review of the State Highway 402 project. These pictures were omitted from our May 23, 2005 submission to your office.

If need you any further information, please contact me at (303) 757-9758.

Sincerely,

Bob Autobee

COLORADO
HISTORICAL
SOCIETY

The Colorado History Museum 1300 Broadway Denver, Colorado 80203-2137

June 29, 2005

Brad Beckham
Manager, Environmental Programs Branch
Colorado Department of Transportation
Department of Transportation
Environmental Programs Branch
4201 East Arkansas Avenue
Denver, CO 80222

Re: CDOT Project STA 402A-003, Determination of Eligibility for SH 402 from US 287 to I-25 Larimer CO. (CHS #37440)

Dear Mr. Beckham,

Thank you for your additional information correspondence dated May 23, 2005 and June 24, 2005 regarding the above-mentioned project.

After review of the submitted information, we agree that the proposed APE is appropriate for the proposed project.

We concur with the finding of not eligible for the resources 5LR.10726.2/Lateral segment of the Big Thompson Manufacturing Ditch and resource 5LR.1709.2/Lateral segment of the Home Supply Ditch. These two segments are minor laterals to larger canals/ditches. Although the laterals were associated with the larger canals/ditches they do not have a significant association to the historic context of irrigation due to their minor role.

We also concur with the findings of not eligible for the following resources.

- 5LR.829/Smith Homestead
- 5LR.1143/Osborn Farm
- 5LR.1703/Rust Property
- 5LR.10723/Olsen House
- 5LR.10724/Bentley House

We concur that the overall linear feature of the Big Thompson Manufacturing Ditch/resource 5LR.10726 is eligible for the National Register of Historic Places. We also concur that resource 5LR.10726.1/segment of the Big Thompson Manufacturing Ditch has a low level of integrity. Therefore, in our opinion, the project will result in a finding of no adverse effect under Section 106 of the National Historic Preservation Act for this resource.

We can not conur with the finding of not eligible for resource 5LR.10725/Weber House. The survey form lacks important details regarding the description and history of the property as well as a justification for the determination of eligbility. We understand that your staff was not given permission to go onto the property to conduct the survey. We have conducted limited research on the Larimer County Tax Assessor's website (http://www.co.larimer.co.us/assessor) and have printed and attached several aerial photographs of the property. From the aerial photographs, the setting of the property appears to include the c.1911 main house surrounded by mature trees and outbuildings within a landscape of work. The landscape of work opens up into agricultural fields featuring roads and other agricultural outbuildings. In our opinion, the property has the possibility of being eligible, but there is not enough information available to make a determination of eligibility. Also, the proposed historic boundary is limited to the footprint of the main house. In our opinion, the historic boundary would encompass the main house, immediate setting, and agricultural fields. We recommend using the phased indentification and evaluation procedure stipulated in 36 CFR 800.4(b)(2).

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings

If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

Georgianna Contiguglia
State Historic Preservation Officer

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Environmental Programs Branch
4201 East Arkansas Avenue
Denver, Colorado 80222
(303) 757-9259

DEPARTMENT OF TRANSPORTATION

July 27, 2005

Mr. Matt Robenalt
Senior Planner
City of Loveland/Long Range Planning
500 East 3rd Street
Loveland, CO 80537

SUBJECT: Additional Site Eligibility Information, CDOT Project STA 402A-003, State Highway 402 from US 287 to I-25, Larimer County

Dear Mr. Robenalt:

This letter and the attached materials constitute a request for comment on additional information associated with the project referenced above. We initially contacted your office about this project in September 2004. In July 2005, Western Cultural Resources Management (WCRM), at the request of CDOT, gathered additional information regarding the Weber House. The historic property boundary was expanded beyond the footprint of the main house, immediate setting, and agricultural fields. This expansion also required a re-evaluation of the previously recorded lateral segment of the Big Thompson Manufacturing Ditch (5LR10726.2). Revised site forms for 5LR10725, including all outbuildings, and a re-evaluation form for 5LR10726.2 have also been transmitted to the Colorado State Historic Preservation Officer (SHPO) and are included herewith.

Eligibility Determinations

Weber House (5LR10725): The Weber House and associated outbuildings were constructed during the first third of the 20th century when irrigated agriculture dominated Northern Colorado's economy. The buildings within the Weber farm complex also display enough integrity to illustrate the importance of small farms during this period. CDOT has determined that its association with early 20th century farming and high level of physical integrity qualify 5LR10725 as *eligible* to the National Register of Historic Places under Criteria a and c.

Big Thompson Manufacturing Ditch (5LR10726.2): In your June 29 letter you concurred with our evaluation of *not eligible* for a 150-foot segment of the Big Thompson Manufacturing Ditch. As noted above, expansion of the historic boundary of 5LR10725 required a reevaluation and expansion of 5LR10726.2 from 150 to 1,750 feet. The July 2005 survey found no historic associations and little remaining integrity within the extended segment. We have therefore determined that this segment is also *not eligible* to the NRHP. Please see the attached reevaluation form for more detailed information.

We request comment from the City of Loveland's Long Range Planning Office regarding these findings within 30 days of receipt of these materials. Your response is necessary for the Federal Highway Administration's compliance with Section 106 of the National Historic Preservation Act (as amended) and with the Advisory Council on Historic Preservation's regulations.

Thank you in advance for your prompt attention to this matter. If you require additional information, please contact CDOT Senior Staff Historian Lisa Schoch at (303) 512-4258.

Very truly yours,

for Brad Beckham, Manager
Environmental Programs Branch

Enclosures: Site forms, 5LR10725
Reevaluation form, 5LR10726.2

cc: Carol Parr, CDOT Region 4
Joanna Morsicato, JF Sato and Associates
File/CF/RF

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Environmental Programs Branch
4201 East Arkansas Avenue
Denver, Colorado 80222
(303) 757-9259

DOT
DEPARTMENT OF TRANSPORTATION

July 27, 2005

Ms. Georgianna Contiguglia
State Historic Preservation Officer
Colorado Historical Society
1300 Broadway
Denver, CO 80203

SUBJECT: Additional Site Eligibility Information, CDOT Project STA 402A-003, State Highway 402 from US 287 to I-25, Larimer County

Dear Ms. Contiguglia:

In correspondence dated June 29, 2005, you requested additional information regarding the Weber House (5LR10725), located within the project corridor referenced above.

In July 2005, Western Cultural Resources Management (WCRM), at the request of CDOT, gathered additional information regarding the Weber House. The historic property boundary was expanded beyond the footprint of the main house, immediate setting, and agricultural fields. This expansion also required a re-evaluation of the previously recorded lateral segment of the Big Thompson Manufacturing Ditch (5LR10726.2). Revised site forms for 5LR10725, including all outbuildings, and a re-evaluation form for 5LR10726.2 are included herewith.

Eligibility Determinations

Weber House (5LR10725): The Weber House and associated outbuildings were constructed during the first third of the 20th century when irrigated agriculture dominated Northern Colorado's economy. The buildings within the Weber farm complex also display enough integrity to illustrate the importance of small farms during this period. CDOT has determined that its association with early 20th century farming and high level of physical integrity qualify 5LR10725 as *eligible* to the National Register of Historic Places under Criteria a and c.

Big Thompson Manufacturing Ditch (5LR10726.2): In your June 29 letter you concurred with our evaluation of *not eligible* for a 150-foot segment of the Big Thompson Manufacturing Ditch. As noted above, expansion of the historic boundary of 5LR10725 required a reevaluation and expansion of 5LR10726.2 from 150 to 1,750 feet. The July 2005 survey found no historic associations and little remaining integrity within the extended segment. We have therefore determined that this segment is also *not eligible* to the NRHP. Please see the attached reevaluation form for more detailed information.

We request your concurrence with the determinations of eligibility outlined herein and on the enclosed forms. Your response is necessary for the Federal Highway Administration's compliance with Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's regulations.

Thank you in advance for your prompt attention to this matter. If you require additional information, please contact CDOT Senior Staff Historian Lisa Schoch at (303) 512-4258.

Very truly yours,

for Brad Beckham, Manager
Environmental Programs Branch

Enclosures: Site forms, 5LR10725
Reevaluation form, 5LR10726.2

cc: Carol Parr, CDOT Region 4
Joanna Morsicato, JF Sato and Associates
File/CF/RF

COLORADO
HISTORICAL
SOCIETY

The Colorado History Museum 1300 Broadway Denver, Colorado 80203-2137

August 9, 2005

Brad Beckham
Manager, Environmental Programs Branch
Colorado Department of Transportation
Department of Transportation
Environmental Programs Branch
4201 East Arkansas Avenue
Denver, CO 80222

Re: CDOT Project STA 402A-003, Determination of Eligibility for SH 402 from US 287 to I-25 Larimer CO. (CHS #37440)

Dear Mr. Beckham,

Thank you for your additional information correspondence dated July 27, 2005 and July 29, 2005 regarding the above-mentioned project. We appreciate your staff's efforts in gathering the information.

After review of the additional information, we concur with the evaluation that resource 5LR.10725/Weber House is eligible for the National Register of Historic Places (NRHP). We also concur with the evaluation that resource 5LR.10726.2/lateral segment of the Big Thompson Manufacturing Ditch is not eligible for the NRHP.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings

If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

Mark Wolfe

for Georgianna Contiguglia
State Historic Preservation Officer

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Environmental Programs Branch
4201 East Arkansas Avenue
Denver, Colorado 80222
(303) 757-9259

March 10, 2006

Mr. Matt Robenalt
Senior Planner
City of Loveland/Long Range Planning
500 East Third
Loveland, CO 80537

SUBJECT: Additional Site Eligibility Information and Effects Determinations, and Section 4(f) *De Minimis* Notification, CDOT Project STA 402A-003, State Highway 402, US 287 to I-25, Larimer County

Dear Mr. Robenalt:

This letter and the enclosed materials constitute a comment for the project referenced above, which involves improvements to State Highway 402 from US 287 east to Interstate 25 in Larimer County. We initially consulted with your office on eligibility determinations in November 2004 and provided additional information in May 2005. Based on an expansion of the Area of Potential Effects (APE), this submittal is an addendum to the 2004 inventory. Also included herein is notification of Section 4(f) *de minimis* findings for two historic properties associated with this project.

Survey Background and Results

Due to a lack of right-of-entry for large portions of private property along the four-mile SH 402 study corridor, Western Cultural Resources Management, Inc. (WCRM) conducted a partial cultural resources survey of the project area during 2003. As noted above, the initial survey report was submitted for your review in November 2004. Subsequent engineering changes resulted in the expansion of the original APE. In October and November 2005, WCRM conducted Class I and Class III level surveys of the expanded APE, which was revised to include a corridor approximately 250 feet on both sides of SH 402 (and which varied to include entire historic properties, as appropriate).

The additional survey resulted in the reevaluation of three historic irrigation ditch segments and two farms and associated farmsteads (Table 1); fourteen historic resources were newly recorded (Table 2). Please refer to the enclosed report and site forms for additional information.

TABLE 1: REEVALUATED SITES

Site Name	Site Number	NRHP Eligibility Status
1,775-foot segment of Home Supply Ditch	5LR1709.2	Officially not eligible, 6/2/2005
Bentley House	5LR10724	Officially not eligible, 9/30/2004
Weber Farm	5LR10725	Officially eligible under Criteria A and C, 8/9/2005

Site Name	Site Number	NRHP Eligibility Status
655-foot segment of Big Thompson Manufacturing Ditch	5LR10726.1	Officially not eligible, 6/29/2005
2,525-foot segment of Big Thompson Manufacturing Ditch	5LR10726.2	Officially not eligible, 6/2/2005 and 8/9/2005

TABLE 2: NEWLY DOCUMENTED SITES

Site Name	Site Number	NRHP Eligibility Status
Johnston Mountain View Farm	5LR11242	Not eligible
Rak Property	5LR11243	Not eligible
Adel Property	5LR11244	Not eligible
Landers Property	5LR11245	Not eligible
Sykes Property	5LR11246	Not eligible
Propp Farm	5LR11247	Not eligible
Woodridge Property	5LR11248	Not eligible
Weber Farm East	5LR11249	Eligible under Criteria A & C
Kelly Farm West	5LR11250	Not eligible
Kelly Farm East	5LR11251	Not eligible
Lopp Property	5LR11252	Not eligible
Bechtel Property	5LR11253	Not eligible
1,250-foot segment of Conner Ditch	5LR11254.1	Not eligible
Olson Rental Property	5LR11255	Not eligible

CDOT concurs with the existing determination of NRHP eligible for the Weber Farm (5LR10725), and recommends that the Weber Farm East (5LR11249) is also eligible under Criteria A and C. Although the two segments of the Big Thompson Manufacturing Ditch (5LR10726.1 & .2) within the project limits are not eligible, the ditch as a whole (5LR10726) was determined eligible in 2005.

Effects Determination

5LR10275, Weber Farm: Widening SH 402 requires additional right-of-way and a permanent utilities easement from the frontage of the Weber Farm, with an approximate depth of 58 feet for right-of-way (a total of 4 acres) and an additional 25 feet for permanent easement along the entire length of the farm along the highway (an additional 1.4 acres). The proposed alignment veers north as SH 402 heads east past the Big Thompson River, and this reduces the right-of-way easement requirements from the eastern 500 feet of Weber Farm frontage. The right-of-way returns to its 150 foot width in this area. Because of the close proximity of the Big Thompson River on the north side of the highway, there are no other practicable alternatives for highway alignment in this area. The project will require taking the main house and the chicken brooder house from the farm site. Therefore, CDOT has determined there will be an *adverse effect* to 5LR10725.

5LR11249, Weber Farm East: This 2.1-acre farm complex consists of 13 buildings, a feed lot and tilled fields. The Weber Farm East is considered eligible as a good representation of a typical early 20th century

Larimer County farm as well as for its extant architectural features. 5LR11249 abuts the south side of existing SH 402. The only impact to the farm will be the acquisition of a 25-foot permanent utility easement across the front of the property. Except for the loss of a cottonwood tree, which is not considered part of the property's historic landscape, no other physical features will be affected. Utility poles and an existing easement are currently located along the front of the property. CDOT has determined that the project will result in *no adverse effect* to 5LR11249.

Notification of Section 4(f) *De Minimis* Determination

The project has been determined to have no adverse effect to the Weber Farm East (5LR11249) and the Big Thompson Manufacturing Ditch (5LR10726). On June 29, 2005, the SHPO concurred that the entire Big Thompson Manufacturing Ditch is *eligible* to the NRHP; a copy of that letter is included herewith. We recommend that there will be *no adverse effect* to this resource resulting from the project. Based on the no adverse effect findings, FHWA intends to make a *de minimis* finding for the Section 4(f) requirements for these historic sites.

As a local governmental authority with a potential interest in this historic feature, we welcome your comments regarding our determination of eligibility. Should you elect to respond, we request that you do so within 30 days of receipt of this letter. If you have questions or require additional information, please contact CDOT Senior Staff Historian Lisa Schoch at (303) 512-4258.

Very truly yours,

For Brad Beckham, Manager
Environmental Programs Branch

Enclosures

cc: Carol Parr, CDOT Region 4
Joanna Morsicato, J.F. Sato and Associates

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Environmental Programs Branch
4201 East Arkansas Avenue
Denver, Colorado 80222
(303) 757-9259

March 10, 2006

Ms. Georgianna Contiguglia
State Historic Preservation Officer
Colorado Historical Society
1300 Broadway
Denver, CO 80203

SUBJECT: Additional Site Eligibility Information and Effects Determinations, and Section 4(f) *De Minimis* Notification, CDOT Project STA 402A-003, State Highway 402, US 287 to I-25, Larimer County

Dear Ms. Contiguglia:

This letter and the enclosed materials constitute a request for concurrence on eligibility and effects for the project referenced above, which involves improvements to State Highway 402 from US 287 east to Interstate 25 in Larimer County. We initially consulted with your staff on eligibility determinations in November 2004 and provided additional information in May 2005. Based on an expansion of the Area of Potential Effects (APE), this submittal is an addendum to the 2004 inventory. Also included herein is notification of Section 4(f) *de minimis* findings for two historic properties associated with this project.

Survey Background and Results

Due to a lack of right-of-entry for large portions of private property along the four-mile SH 402 study corridor, Western Cultural Resources Management, Inc. (WCRM) conducted a partial cultural resources survey of the project area during 2003. As noted above, the initial survey report was submitted for your review in November 2004. Subsequent engineering changes resulted in the expansion of the original APE. In October and November 2005, WCRM conducted Class I and Class III level surveys of the expanded APE, which was revised to include a corridor approximately 250 feet on both sides of SH 402 (and which varied to include entire historic properties, as appropriate).

The additional survey resulted in the reevaluation of three historic irrigation ditch segments and two farms and associated farmsteads (Table 1); fourteen historic resources were newly recorded (Table 2). Please refer to the enclosed report and site forms for additional information.

TABLE 1: REEVALUATED SITES

Site Name	Site Number	NRHP Eligibility Status
1,775-foot segment of Home Supply Ditch	5LR1709.2	Officially not eligible, 6/2/2005
Bentley House	5LR10724	Officially not eligible, 9/30/2004
Weber Farm	5LR10725	Officially eligible under Criteria A and C, 8/9/2005

Site Name	Site Number	NRHP Eligibility Status
655-foot segment of Big Thompson Manufacturing Ditch	5LR10726.1	Officially not eligible, 6/29/2005
2,525-foot segment of Big Thompson Manufacturing Ditch	5LR10726.2	Officially not eligible, 6/2/2005 and 8/9/2005

TABLE 2: NEWLY DOCUMENTED SITES

Site Name	Site Number	NRHP Eligibility Status
Johnston Mountain View Farm	5LR11242	Not eligible
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Adel Property	5LR11244	Not eligible
Landers Property	5LR11245	Not eligible
Sykes Property	5LR11246	Not eligible
Propp Farm	5LR11247	Not eligible
Woodridge Property	5LR11248	Not eligible
Weber Farm East	5LR11249	Eligible under Criteria A & C
Kelly Farm West	5LR11250	Not eligible
Kelly Farm East	5LR11251	Not eligible
Lopp Property	5LR11252	Not eligible
Bechtel Property	5LR11253	Not eligible
1,250-foot segment of Conner Ditch	5LR11254.1	Not eligible
Olson Rental Property	5LR11255	Not eligible

CDOT concurs with the existing determination of NRHP eligible for the Weber Farm (5LR10725), and recommends that the Weber Farm East (5LR11249) is also eligible under Criteria A and C. Although the two segments of the Big Thompson Manufacturing Ditch (5LR10726.1 & .2) within the project limits are not eligible, the ditch as a whole (5LR10726) was determined eligible in 2005.

Effects Determination

5LR10275, Weber Farm: Widening SH 402 requires additional right-of-way and a permanent utilities easement from the frontage of the Weber Farm, with an approximate depth of 58 feet for right-of-way (a total of 4 acres) and an additional 25 feet for permanent easement along the entire length of the farm along the highway (an additional 1.4 acres). The proposed alignment veers north as SH 402 heads east past the Big Thompson River, and this reduces the right-of-way easement requirements from the eastern 500 feet of Weber Farm frontage. The right-of-way returns to its 150 foot width in this area. Because of the close proximity of the Big Thompson River on the north side of the highway, there are no other practicable alternatives for highway alignment in this area. The project will require taking the main house and the chicken brooder house from the farm site. Therefore, CDOT has determined there will be an *adverse effect* to 5LR10725.

5LR11249, Weber Farm East: This 2.1-acre farm complex consists of 13 buildings, a feed lot and tilled fields. The Weber Farm East is considered eligible as a good representation of a typical early 20th century

Larimer County farm as well as for its extant architectural features. 5LR11249 abuts the south side of existing SH 402. The only impact to the farm will be the acquisition of a 25-foot permanent utility easement across the front of the property. Except for the loss of a cottonwood tree, which is not considered part of the property's historic landscape, no other physical features will be affected. Utility poles and an existing easement are currently located along the front of the property. CDOT has determined that the project will result in *no adverse effect* to 5LR11249.

Notification of Section 4(f) *De Minimis* Determination

The project has been determined to have no adverse effect to the Weber Farm East (5LR11249) and the Big Thompson Manufacturing Ditch (5LR10726). On June 29, 2005, you concurred that the entire Big Thompson Manufacturing Ditch is *eligible* to the NRHP; a copy of that letter is included herewith. We recommend that there will be *no adverse effect* to this resource resulting from the project. Based on the no adverse effect findings, FHWA intends to make a *de minimis* finding for the Section 4(f) requirements for these historic sites.

We request your concurrence with the determinations of eligibility and effects outlined herein and in the enclosed report. Your response is necessary for the Federal Highway Administration's compliance with Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's regulations. This information has also been sent to the City of Loveland's Long Range Planning Office for review and comment. We will forward their response to you when received.

If you require additional information, please contact CDOT Senior Staff Historian Lisa Schoch at (303) 512-4258.

Very truly yours,

for Brad Beckham, Manager
Environmental Programs Branch

Enclosures

cc: Carol Parr, CDOT Region 4
Joanna Morsicato, J.F. Sato and Associates

COLORADO
HISTORICAL
SOCIETY

The Colorado History Museum 1300 Broadway Denver, Colorado 80203-2137

March 30, 2006

Brad Beckham
Manager, Environmental Programs Branch
Colorado Department of Transportation
Environmental Programs Branch
4201 East Arkansas Avenue
Denver, CO 80222

Re: State Highway 402, US 287 to I-25 and Section 4(f) De Minimis Notification, CDOT Project STA 402A-003, Larimer County, CO. (CHS #37440)

Dear Mr. Beckham,

Thank you for your correspondence dated March 10, 2006 and received by our office on March 15, 2006 regarding the above-mentioned project.

After review of the submitted information, we concur that the resources below are not eligible for the National Register of Historic Places (NRHP). Also included below are specifics comments related to certain National Register criteria.

- 5LR.1709.2/segment of Home Supply Ditch
  We concur that this segment, which is a lateral to the Home Supply Ditch, is not eligible for the NRHP.
- 5LR.11243/Rak Property
  We concur that the property is not eligible under National Register Criterion A for agriculture since the historic use of agriculture has been changed and no agricultural fields appear to be associated with the property. We also concur that the property is not eligible under National Register Criterion C for architecture due to a loss of integrity since the house was moved onto the property from a remote location and then altered to serve as a residence.
- 5LR. 11244/Adel Property
  We concur that the property is not eligible under National Register Criterion A for agriculture since there are no longer any associated agricultural fields. We also concur that the property is not eligible under National Register Criterion C for architecture due to a significant loss of integrity as a result of modern alterations and additions to the house as well as the construction of modern buildings on the site.

- 5LR.11245/Landers Property
  We concur that the property is not eligible under National Register Criterion A for agriculture since there is no associated farm land and many of the agricultural buildings have suffered a significant loss of integrity. Also, several modern additions have been added within the historic setting. However, we do not concur with the evaluation that the property has lost its historic setting due to the construction of I-25. Using the Larimer County Tax Assessor's website to determine distance, the property is approximately a mile and a half from I-25. When evaluating the historic setting of a site, it is more appropriate to evaluate the immediate setting of the property. We concur that the property is not eligible under National Register Criterion C for architecture due to a significant loss of integrity as a result of modern alterations and additions to the buildings.
- 5LR.11246/Sykes Property
  We concur that the property is not eligible under National Register Criterion A for agriculture due to the change of use of the associated agricultural fields and alterations and additions to the buildings. We also concur with the finding that the property is not eligible under National Register Criterion C for architecture due to a significant loss of integrity of the buildings due to alterations and additions.
- 5LR.11248/Woolridge Property
  We concur that the property has suffered a significant loss of integrity due to alterations and construction of modern buildings and can not convey any area of National Register significance.
- 5LR.11252/Lopp House
  We concur that the property is not eligible under National Register Criterion A for agriculture due to the change of use of the associated agricultural fields and alterations and additions to the buildings. We also concur with the finding that the property is not eligible under National Register Criterion C for architecture due to a significant loss of integrity of the buildings due to alterations and additions.
- 5LR.11253/Bechtel Property
  We concur that the property is not eligible under National Register Criterion A for agriculture due to the loss of the main house and associated agricultural fields. We also concur that the property is not eligible under National Register Criterion C for architecture due to the significant loss of integrity due the loss of the main house and poor condition of the outbuildings.
- 5LR.11254.1/segment of Conner Ditch Lateral
- 5LR.11255/Olsen Rental Property
- 5LR.10724/Bentley Property
- 5LR.10726.1/segment Big Thompson Manufacturing Ditch
- 5LR.10726.2/segment Big Thompson Manufacturing Ditch

After review of the submitted information, we concur with the finding of eligible for the NRHP for the properties listed below.

- 5LR.11249/Weber Farm East.
- 5LR.10725/Weber Farm (formally recorded as the Weber House)

After review of the submitted information, we request additional information for the properties listed below.

- 5LR.11242/Johnston Mountain View Farm
  According to the inventory form, the main house was moved, but the form does not state where the property was moved from. Was the main house moved from within its historic setting or from a remote site? We concur that the construction of I-25 does lessen the historic setting. However, the remaining historic setting within the site boundary needs to be addressed. According to the Larimer County Tax Assessor's website, several acres of agricultural land are still associated with the property. Also, the open agricultural field located just west and currently excluded from the proposed site boundary is also under the same ownership as the surveyed property. Even though I-25 is adjacent to the property, was the setting within the site boundary evaluated to determine if the open agricultural land is associated with the property and whether it can support and convey the significance of agriculture for the entire property? In our opinion, the historic setting for the property within the site boundary has not been radically altered by the construction of I-25, as stated in the inventory form.

  In regards to the outbuildings, the Management Data Form states that buildings B2, B4, and B5 have been modified. When the architectural component forms for these buildings were reviewed, it was noted that B2 and B5 have new roofing materials and that the southern façade of B4 has been renovated with new siding in 1964. In our opinion, these changes are minor and do not significantly lessen the historic integrity of these buildings. We agree that these buildings along with the main house may not meet the integrity needed to be eligible under National Register Criterion C for architecture; however, we believe that as a complex with the agricultural fields it could be significant under National Register Criterion A for agriculture. The Management Data Form states that the property is not eligible under National Register Criterion A for agriculture because the "site no longer retains its contextual connections." In order to better understand the proposed justification for the property not being eligible under National Register Criterion A, please clarify the loss of contextual connections and evaluation of integrity under National Register Criterion A.

- 5LR.11246/Sykes Property
  According to the survey form, the site boundary includes only the cluster of buildings and not the open agricultural field located behind the buildings. Is the agricultural field historically associated with the Sykes property? The inventory form states that dates of the additions to the main house are unknown. It is difficult to determine from the pictures, but in your opinion do the additions appear to be modern or occurred during the historic period for the house? The inventory form states that the date is unknown for resource B4; however, does the joining of the buildings appear to have been done during the historic period for the farm?

- 5LR.11247/Propp Farm
  After review of the survey, we concur that the resource does not retain enough significance to meet National Register Criterion C for architecture. However, we request additional information regarding the resource's significance under National Register Criterion A for agriculture. After review of the aerial

photography on the Larimer County Tax Assessor's website, open agricultural fields are located to the east and south of this resource. Was this agricultural land researched to determine if it was historically associated with the property? While the main house has lost architectural integrity due to alterations, it appears that together, the main house, outbuildings, and especially the barn may have the potential to convey significance under National Register Criterion A for agriculture. The inventory form does not specifically state why the property is not significant in agriculture. Please clarify the evaluation of the property under the area of agriculture and why it is not significant.

- 5LR.11250/Kelly Farm West and 5.LR.11251/Kelly Farm East
  Why were these farms broken into a two separate sections? Should the two farms be evaluated as one property? Do the two farms encompass a larger farm complex of one family?

  The Management Data Form for 5LR.11250 states that the property is surrounded by farm land, but no longer part of an active farm and no longer adequately represents a 20th-century Larimer County farm. Does that mean that the agricultural fields no longer convey the historic use of beet farming? How does the farm no longer represent a 20th-century Larimer County farm? The Colorado Plains Historic Context-Post 1900 Agriculture-Sugar Beets context does not describe the character-defining features of a Larimer County farm. What criteria were used to evaluation the property as whether or not it is a good example of a Larimer County farm?

Once we receive the above information, we will be able to continue consultation regarding the National Register eligibility of the identified resources. Once we conclude the consultation regarding the eligibility of these properties, we will then be able to conclude the assessment of effects under Section 106 to those properties.

If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

Mark Wolfe

for Georgianna Contiguglia
State Historic Preservation Officer

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Environmental Programs Branch
4201 East Arkansas Avenue
Denver, Colorado 80222
(303) 757-9259

DEPARTMENT OF TRANSPORTATION

May 1, 2006

Ms. Georgianna Contiguglia
State Historic Preservation Officer
Colorado Historical Society
1300 Broadway
Denver, CO 80203

SUBJECT: Additional Information Related to Eligibility and Effects, CDOT Project STA 402A-003, State Highway 402, US 287 to I-25

Dear Ms. Contiguglia:

In your correspondence dated March 30, 2006 regarding our findings of eligibility and effects for the project referenced above, you requested additional information for the following properties: Johnson Mountain View Farm (5LR11242), Sykes Property (5LR11246), Propp Farm (5LR11247), Kelly Farm West (5LR11250) and Kelly Farm East (5LR11251).

Johnson Mountain View Farm (5LR11242): You requested data related to (1) where the main house was moved from and a further description of the remaining historic setting within the site boundary; (2) if the site boundary was evaluated to determine if the open land is associated with the Johnson property and whether it can support the significance of agriculture for the entire property; and (3) a further explanation of the loss of contextual connections and evaluation of integrity under NRHP Criterion a.

1. Item #22 of the Historic Architectural Component Form states, "The house was relocated and remodeled in 1964, due to the construction of I-25." Therefore, the house was moved from its original historic setting within the I-25 right-of-way.

2. Item #11 of the Management Data Form, as well as an aerial map provided with the site documentation, indicates that open agricultural land is associated with this property. The site boundary as described and illustrated by the aerial graphic includes two parcels (PIN #8522000008 and #8522000017) both owned by Mountain View Farms, Inc. Thus, all the agricultural fields associated with the property are within the site boundary and have been evaluated to determine if they can support and convey the significance of agriculture.

3. The historical setting for the property within the site boundary was evaluated inclusive of all associated agricultural fields and was found to be not eligible under National Register Criterion a for agriculture, due to the following factors:

a. The main house originally sat within the current I-25 ROW and was moved to its current location in the past 45 years.
b. The current site boundary does not reflect the original boundary as a result of the presence of I-25 and its interchange with SH 402.

c. The site no longer functions in its original capacity as an owner-occupied farm; the domestic buildings are now rentals and absentee lessees farm the land. Key farm buildings (e.g., a barn) are not present.
d. The main house has been remodeled and three other buildings (B2, B4 and B5) have been modified. The construction of I-25 radically altered the setting of one shed (B3). B2 was once a milking parlor and is now vacant; B4, which was originally used for calving, is vacant; and the function of B5 is unknown. Thus, the functional integrity of buildings within the current site boundary has changed.
e. Six modern buildings and nine modern features are within the current site boundary. These buildings have altered the relationships of the original buildings with each other. The present setting and built environment represent the post I-25 period.

Sykes Property (5LR11246): You asked (1) if the agricultural field is historically associated with the Sykes property; (2) if the additions appear to be modern or occurred during the historic period for the house, and (3) if joining of the buildings occurred during the historic period for the farm.

1. The buildings within the site boundary and the open agricultural fields located behind them can no longer be clearly associated to the farm's period of historic significance. The Larimer County Assessor's records indicate that Mr. Sykes sub-divided the property in 2002 as follows: one ownership of 1.85 acres including the land that the main house sits on, a second ownership of 15.24 acres south of the house, and a third ownership of 2.3 acres of commercial land, for a combined total of 19.39 acres. Historically, the acreage of the Sykes property is nowhere near the average 250 to 400 acres for a typical Larimer County farm dating from the first half of the 20th century. Most farms in the area (e.g., the Weber Farm/ Farm/5LR10725) were generally more than 40 acres. Therefore, the acreage of the Sykes property is not generally considered large enough to constitute a historic 20th century Larimer County farm.

a. The Larimer County Assessor's records indicate a remodel of the main house (B1) in 1972 and construction of a warehouse on the parcel's eastern portion in 1997. Mr. Sykes, the current property owner, stated to the field historian that he moved the grain bin after the remodeling in 1972.
b. Mr. Sykes was not forthcoming in providing an exact date of the additions to the B4 complex. Based on general information on the remodeling, the joining of the buildings defining B4 occurred within the past 50 years.

Propp Farm (5LR11247): You inquired about (1) if the agricultural property was researched to determine if it was historically associated with the property; and (2) why 5LR11247 is not significant under Criterion a as an agricultural property.

1. Western Cultural Resource Management's (WCRM) search of records held by the Bureau of Land Management's (BLM) Government Land Office (GLO) indicate that agricultural lands have been historically associated with the property.

2. CDOT does not feel that the agricultural lands together with the remaining farmstead features (i.e., the main house, outbuildings and barn) have the potential to convey significance under Criterion "a" as the farmstead lacks many key buildings and structures, or many of the operational buildings are no longer present and their function has changed. On the Propp Farm, there is no longer a clear association between the surrounding agricultural fields and the remnant farm buildings. Although these lands are part of the same parcel, the farmlands were abandoned at some point and could now be classified as meadows. Finally, 5LR11247 is not a complete example of a Larimer County farm when compared to other properties in the project area previously determined by your office as NRHP eligible (i.e., 5LR10725 and

5LR11249). The use of "complete" in this context is defined as having key buildings and elements of the built environment from the historic period present and intact.

Kelly Farm West (5LR11250) and Kelly Farm East (5LR11251): You asked (1) why the Kelly Farm was broken into two sections, and questioned if the two farms should be evaluated as one property, as they might encompass a larger farm complex; (2) how both properties no longer represent a 20th-century Larimer County farm; and (3) what criteria were used to evaluate the property as to whether or not it is good example of a Larimer County farm.

1. According to a representative of the Kelly Farm Trust, the parcel has one owner (the Kelly Farm Trust), but is currently divided into three rentals. The farmlands are also rented and currently farmed by others. Based on a January 11, 2006 telephone discussion between WCRM and your office, it was determined that since 5LR11250 and 5LR11251 have one owner (Kelly Farm Trust) and they had been separate farms owned by two different families in the past, they should remain as two separate farms.

2. 5LR11250 no longer represents a 20th century Larimer County farm because the farmstead serves as a rental, and although some farm buildings remain, they no longer represent a working farm when compared to other farms in the area (e.g., Weber Farm East). Additionally, some key farm components, including operational buildings such as a barn, are no longer present.

3. There is currently no historic context for Larimer County agriculture. WCRM used the 1984 OAHP research document for the Colorado Plains, the Denver International Airport (DIA) Multiple Property Nomination, and History of Ranching in South Park Nomination form to establish criteria for what constitutes a "Colorado farm." There are Weld County studies that provide examples of eastern Colorado farms (i.e., *Mehls, Steven F. and Carol J., Reconnaissance and Intensive Survey and Context Report of Farming in Weld County, Colorado, Colorado Office of Archaeology and Historic Preservation, Colorado Historical Society, Denver, 1989*). These criteria include:

i. The presence of key buildings or structures or their archaeological remains that define them as an operating unit based on agricultural pursuits. These include domestic buildings (e.g., house, privy, etc.) and operational buildings (e.g., barns, silos, bins, corrals, pins, animal sheds, and poultry houses, etc.).

ii. Landscape features (e.g., fences, windbreaks, shade trees, kitchen garden, flowerbeds, shrubbery, etc.).

iii. Clearly associated farm fields.

iv. Occasional improvements (e.g., additional outbuildings and fencing, shelterbelts, irrigation systems, etc.).

We would also like to bring to your attention changes to the Cultural Resources Inventory and Management Data Form for 5LR11251. On page 16 of the Inventory under 5LR11251, the text reads, "The *site* covers approximately one-half an acre." It should say, "The *farmstead* covers approximately one-half an acre." Under Item #11 on the Management Data Form, the farm dimensions should be 389 meters by 366 meters with an area of 142,374 meters squared, or 35 acres. Please replace both sheets with the enclosed corrected versions.

We request your concurrence with the determinations of eligibility and effects outlined in our original letter, with the supporting documentation contained herein. Your response is necessary for the Federal Highway Administration's compliance with Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's regulations.

If you have questions regarding the information outlined above, please contact CDOT Senior Staff Historian Lisa Schoch at (303) 512-4258.

Very truly yours,

for Brad Beckham, Manager
Environmental Programs Branch

Enclosures

cc: Carol Parr, CDOT Region 4
Joanna Morsicato, J.F. Sato and Associates

COLORADO
HISTORICAL
SOCIETY

The Colorado History Museum 1300 Broadway Denver, Colorado 80203-2137

May 26, 2006

Brad Beckham
Manager, Environmental Programs Branch
Colorado Department of Transportation
Environmental Programs Branch
4201 East Arkansas Avenue
Denver, CO 80222

Re: State Highway 402, US 287 to I-25. (CHS #37440)

Dear Mr. Beckham,

Thank you for your additional information correspondence dated May 1, 2006 and received by our office on May 4, 2006 regarding the above-mentioned project.

After review of the submitted information, we do not concur with the findings of not eligible for the National Register of Historic Places for the resources listed below.

- 5LR.11242/Johnson Mountain View Farm
- 5LR.11247/Propp Farm.

We concur with the findings for the remaining resources addressed in the additional information correspondence.

In order to best address the issues regarding resources 5LR.11242 and 5LR.11247 we would like to request a meeting to with you and the consultant regarding these resources.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings.

Please note that our compliance letter does not end the 30-day review period provided to other consulting parties. If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

Georgianna Contiguglia
State Historic Preservation Officer

MEMORANDUM

DEPARTMENT OF TRANSPORTATION

Environmental Programs Branch
4201 East Arkansas Avenue
Denver, Colorado 80222
(303) 757-9259

July 17, 2006

Ms. Amy Pallante
Section 106 Compliance Coordinator
Colorado Historical Society/SHPO
1300 Broadway
Denver, CO 80203-2137

SUBJECT: SH 402 Revisions to Johnson Mountain View Farm (5LR11242) and Propp Farm (5LR11247)

Dear Ms. Pallante:

Enclosed is a revised addendum to a cultural resources inventory and updated site forms for two agricultural properties in State Highway (SH) 402 project area in Larimer County.

These materials are a response to your request for additional information for the Johnson Mountain Valley Farm (5LR11242) and Propp Farm properties (5LR11247) resulting from a meeting with your office on June 19. Please replace your copies of the forms for 5LR11242 and 5LR11247 with the enclosed forms. We also request that you replace the first page of the Management Data Form for Kelly Farm East (5LR11251 with the enclosed sheet. This change reflects a minor revision to the original form.

If you have questions or require additional information, please contact CDOT Assistant Staff Historian Bob Autobee at (303) 757-9758.

Sincerely,

Bob Autobee
Assistant Staff Historian-CDOT

COLORADO
HISTORICAL
SOCIETY

The Colorado History Museum 1300 Broadway Denver, Colorado 80203-2137

July 24, 2006

Brad Beckham
Manager, Environmental Programs Branch
Colorado Department of Transportation
Environmental Programs Branch
4201 East Arkansas Avenue
Denver, CO 80222

Re: State Highway 402, US 287 to I-25. (CHS #37440)

Dear Mr. Beckham,

Thank you for your additional information correspondence dated July 17, 2006 and received by our office on July 19, 2006 regarding the above-mentioned project.

After review of the submitted information, we concur with the findings of eligible for the National Register of Historic Places under National Register Criterion A for the resources listed below.

- 5LR.11242/Johnson Mountain View Farm
- 5LR.11247/Propp Farm.

In our opinion, the c.1925 barn (feature B3) associated with the Propp Farm/resource 5LR.11247 is individually significant under National Register Criterion C for architecture and retains historic integrity. According to the inventory form, the only change to the barn is the removal of some windows. In our opinion, the barn is a good representative example of a method and type of construction as a balloon-framed barn.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings.

Please note that our compliance letter does not end the 30-day review period provided to other consulting parties. If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

Mark Wolfe

for Georgianna Contiguglia
State Historic Preservation Officer

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Environmental Programs Branch
4201 East Arkansas Avenue
Denver, Colorado 80222
(303) 757-9259

DEPARTMENT OF TRANSPORTATION

August 15, 2006

Mr. Greg George
Director of Community Services
Loveland Historic Preservation Commission
500 East Third
Loveland, CO 80537

SUBJECT: Additional Effects Determinations and *Section 4(f) De Minimis* Notification, CDOT Project STA 402A-003, State Highway 402 from US 287 to I-25, Larimer County

Dear Mr. George:

This letter and enclosed materials constitutes a request for comment on the project referenced above, which involves improvements to State Highway 402 from US 287 east to Interstate 25 in Larimer County. This request is a follow-up to the State Historic Preservation Officer's (SHPO) July 24, 2006 eligibility concurrence for the Johnson Mountain View Farm (5LR11242) and the Propp Farm (5LR11247). This letter also includes notification of Section 4(f) *de minimis* findings for these two historic properties associated with this project.

EFFECTS DETERMINATIONS

Mountain View Farm (5LR11242): The project will taper SH 402 from four to two lanes at the Interstate 25 interchange adjacent to the Mountain View Farm. The additional proposed right-of-way for SH 402 is 35 feet wide and 1935 feet long. Potential physical improvements will generally remain south of the farm's existing fence line. The shoulder for the expanded SH 402 will end at the current fence; however, fill slopes associated with the construction will intrude further to the north. Possible impacts to features associated with the farm within the expanded right-of-way include: loss of a recently constructed feedlot, location adjacent to the front of the calving shed and loss of a bank of weedy species trees located in front of the house. The field survey revealed an unkempt, dense growth of elms, sumac and juniper. These trees likely planted after the relocation of the house during 1960s and currently provide a visual barrier between the house and SH 402. They do not appear to have been a part of the original historic setting. CDOT has determined there will be *no adverse effect* to 5LR11242 resulting from this project.

Propp Farm (5LR11247): Expansion of SH 402 will move the road's alignment to the north. The only impact to the farm site will be the acquisition of a 25-foot wide by 410-foot long permanent utility easement along the front of the property. Except for the possible loss of several trees associated with placing utilities underground, there will be no other impacts to the Propp Farmstead. The utility poles are currently located in an easement along the front of the property. The trees date from the 1960s and are not part of the historic landscape. CDOT has determined that the project will result in *no adverse effect* to the Propp Farm (5LR11247).

In correspondence dated June 29, 2005, the SHPO concurred that the following properties within the project area are *not eligible*:

- 1,775-foot segment of Home Supply Ditch (5LR1709.2)
- Bentley House (5LR10724)
- Rak Property (5LR11243)
- Adel Property (5LR11244)
- Landers Property (5LR11245)
- Sykes Property (5LR11246)
- Woodridge Property (5LR11248)
- Kelly Farm West (5LR11250)
- Kelly Farm East (5LR11251)
- Lopp Property (5LR11252)
- Bechtel Property (5LR11253)
- 1,250-foot segment of Conner Ditch (5LR11254.1)
- Olson Rental Property (5LR11255)

Notification of Section 4(f) De Minimis Determination

Based on the SHPO's July 24 correspondence, this project will have *no adverse effect* to the NRHP-*eligible* Mountain View Farm (5LR11242) and the Propp Farm (5LR11247). A copy of this concurrence is included with this submission. We recommend there will be *no adverse effect* to these resources resulting from this project. Based on the no adverse effect findings, FHWA intends to make a *de minimis* finding for the Section 4(f) requirements for these historic sites.

As a local governmental organization with a potential interest in this project, we welcome your comments regarding our determination of eligibility. Should you elect to respond, we request that you do so within 30 days of receipt of this letter. If you have questions or require additional information, please contact CDOT Assistant Staff Historian Robert Autobee at (303) 757-9758.

Very truly yours,

FEJ

Brad Beckham, Manager
Environmental Programs Branch

Enclosures

cc: Carol Parr, CDOT Region 4
Joanna Morsicato, J.F. Sato and Associates

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Environmental Programs Branch
4201 East Arkansas Avenue
Denver, Colorado 80222
(303) 757-9259

DEPARTMENT OF TRANSPORTATION

August 15, 2006

Ms. Georgianna Contiguglia
State Historic Preservation Officer
Colorado Historical Society
1300 Broadway
Denver, CO 80203

SUBJECT: Additional Effects Determinations and *Section 4(f) De Minimis* Notification, CDOT Project STA 402A-003, State Highway 402 from US 287 to I-25, Larimer County

Dear Ms. Contiguglia:

This letter and enclosed materials constitutes a request for concurrence on effects for the project referenced above, which involves improvements to State Highway 402 from US 287 east to Interstate 25 in Larimer County. This request is a follow-up to your July 24, 2006 eligibility concurrence for the Johnson Mountain View Farm (5LR11242) and the Propp Farm (5LR11247). This letter also includes notification of Section 4(f) *de minimis* findings for these two historic properties associated with this project.

EFFECTS DETERMINATIONS

Mountain View Farm (5LR11242): The project will taper SH 402 from four to two lanes at the Interstate 25 interchange adjacent to the Mountain View Farm. The additional proposed right-of-way for SH 402 is 35 feet wide and 1935 feet long. Potential physical improvements will generally remain south of the farm's existing fence line. The shoulder for the expanded SH 402 will end at the current fence; however, fill slopes associated with the construction will intrude further to the north. Possible impacts to features associated with the farm within the expanded right-of-way include: loss of a recently constructed feedlot, location adjacent to the front of the calving shed and loss of a bank of weedy species trees located in front of the house. The field survey revealed an unkempt, dense growth of elms, sumac and juniper. These trees likely planted after the relocation of the house during 1960s and currently provide a visual barrier between the house and SH 402. They do not appear to have been a part of the original historic setting. CDOT has determined there will be *no adverse effect* to 5LR11242 resulting from this project.

Propp Farm (5LR11247): Expansion of SH 402 will move the road's alignment to the north. The only impact to the farm site will be the acquisition of a 25-foot wide by 410-foot long permanent utility easement along the front of the property. Except for the possible loss of several trees associated with placing utilities underground, there will be no other impacts to the Propp Farmstead. The utility poles are currently located in an easement along the front of the property. The trees date from the 1960s and are not part of the historic landscape. CDOT has determined that the project will result in *no adverse effect* to the Propp Farm (5LR11247).

In correspondence dated June 29, 2005, your office concurred that the following properties within the project area are *not eligible*:

- 1,775-foot segment of Home Supply Ditch (5LR1709.2)
- Bentley House (5LR10724)
- Rak Property (5LR11243)
- Adel Property (5LR11244)
- Landers Property (5LR11245)
- Sykes Property (5LR11246)
- Woodridge Property (5LR11248)
- Kelly Farm West (5LR11250)
- Kelly Farm East (5LR11251)
- Lopp Property (5LR11252)
- Bechtel Property (5LR11253)
- 1,250-foot segment of Conner Ditch (5LR11254.1)
- Olson Rental Property (5LR11255)

Notification of Section 4(f) De Minimis Determination

On March 13, 2006, CDOT issued a letter of notification to your office of a Section 4(f) *de minimis* determination for two other properties in the project area – the Weber Farm East (5LR11249) and the Big Thompson Manufacturing Ditch (5LR10726). Based on your July 24 correspondence, this project will have *no adverse effect* to the NRHP-*eligible* Mountain View Farm (5LR11242) and the Propp Farm (5LR11247). A copy of this concurrence is included with this submission. We recommend there will be *no adverse effect* to these resources resulting from this project. Based on the no adverse effect findings, FHWA intends to make a *de minimis* finding for the Section 4(f) requirements for these historic sites.

We hereby request your concurrence with the determinations of eligibility and effects outlined herein and in the enclosed report. Your response is necessary for the Federal Highway Administration's compliance with Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's regulations. This information has also been sent to the City of Loveland's Long Range Planning Office for review and comment. We will forward their response to you once we receive it.

If you require additional information, please contact CDOT Assistant Staff Historian Robert Autobee at (303) 757-9758.

Very truly yours,

Brad Beckham, Manager
Environmental Programs Branch

Enclosures

cc: Carol Parr, CDOT Region 4
Joanna Morsicato, J.F. Sato and Associates

COLORADO
HISTORICAL
SOCIETY

The Colorado History Museum 1300 Broadway Denver, Colorado 80203-2137

August 22, 2006

Brad Beckham
Manager, Environmental Programs Branch
Colorado Department of Transportation
Environmental Programs Branch
4201 East Arkansas Avenue
Denver, CO 80222

Re: State Highway 402, US 287 to I-25. (CHS #37440)

Dear Mr. Beckham,

Thank you for your additional information correspondence dated August 15, 2006 and received by our office on August 16, 2006 regarding the above-mentioned project. After review of the submitted information, we concur with the finding of effects for 5LR.11242/Mountain View Farm and 5LR.11247/Propp Farm.

If unidentified archaeological resources are discovered during construction, work must be interrupted until the resources have been evaluated in terms of the National Register criteria, 36 CRF 60.4, in consultation with this office.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings.

Please note that our compliance letter does not end the 30-day review period provided to other consulting parties. If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

for Mark Wolfe
Georgianna Contiguglia
State Historic Preservation Officer

COLORADO
HISTORICAL
SOCIETY

The Colorado History Museum 1300 Broadway Denver, Colorado 80203-2137

September 13, 2006

Brad Beckham
Manager, Environmental Programs Branch
Colorado Department of Transportation
Environmental Programs Branch
4201 East Arkansas Avenue
Denver, CO 80222

Re: State Highway 402, US 287 to I-25. (CHS #37440)

Dear Mr. Beckham,

On September 7, 2006, our office received an email from your staff requesting additional information regarding the above-mentioned project.

After review of the project files and information provided, we concur with the proposed finding of *no adverse effect* under the National Historic Preservation Act for resources 5LR.11249/Weber Farm East and 5LR.10726/Big Thompson Manufacturing Ditch.

If unidentified archaeological resources are discovered during construction, work must be interrupted until the resources have been evaluated in terms of the National Register criteria, 36 CRF 60.4, in consultation with this office.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings.

Please note that our compliance letter does not end the 30-day review period provided to other consulting parties. If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

Mark Wolfe

for Georgianna Contiguglia
State Historic Preservation Officer

U.S. Department of Transportation
Federal Highway Administration

12300 W. Dakota Ave., Ste. 180
Lakewood, CO 80228

October 19, 2006

Colorado Federal Aid Division

Ms. Carol Legard
Advisory Council on Historic Preservation
1100 Pennsylvania Avenue, NW
Washington, DC 20004

Dear Ms. Legard:

Subject: Documentation for Finding of Adverse Effect, Colorado Department of Transportation Project STA 402A-003, Weber Farm/State Highway 402, Larimer County, Colorado

Transmitted herewith is the Documentation for Finding of Adverse Effect for the Colorado Department of Transportation (CDOT) project referenced above. The Federal Highway Administration (FHWA) and the Colorado State Historic Preservation Officer (SHPO) have agreed that the proposed undertaking will have an Adverse Effect on the Weber Farm (5LR10725), which was determined eligible for listing on the National Register of Historic Places in August 2005.

FHWA is submitting this Documentation for Finding of Adverse Effect pursuant to the Advisory Council regulations, 36 CFR 800.6(a)(1). In accordance with the process set forth in the regulations, mitigation measures have been agreed upon with the SHPO and are outlined in the request for concurrence of effects (Attachment C of the Documentation). Please respond if the Council would like to participate in the consultation between the agencies and the SHPO. If the Council does not respond within 15 days of this request, the agency, in accordance with 36 CFR 800.6(a)(1)(c)(iv), will assume that the Council will not be participating.

If you have questions regarding this project, please contact CDOT Senior Staff Historian Lisa Schoch at (303) 512-4258.

Sincerely yours,

"Melinda Castillo"
for David A. Nicol, P.E.
Division Administrator

Enclosure: Copy of Documentation of Adverse Effect for CDOT Project STA 402A-003)
cc: Mr. Brad Beckham, Manager Environmental Programs Branch, CDOT
Ms. Lisa Schoch, Environmental Programs Branch, CDOT
Ms. Karla Harding, Region 4 Transportation Director, CDOT
(Attn: Mr. Stan Elmquist, Region Planning & Environmental Manager)
yc: SA 12509/F:mcastillo/Division-ACHP SH 402 letter.

BUCKLE UP AMERICA

MEMORANDUM OF AGREEMENT
BETWEEN THE FEDERAL HIGHWAY ADMINISTRATION
AND THE COLORADO STATE HISTORIC PRESERVATION OFFICER
REGARDING THE WEBER FARM (5LR10725)

COLORADO DEPARTMENT OF TRANSPORTATION PROJECT STA 402A-003, LARIMER COUNTY, COLORADO

WHEREAS, the Federal Highway Administration (FHWA) has determined that Project STA 402A-003 will have an adverse effect on the Weber Farm (5LR10725), which is eligible for listing on the National Register of Historic Places. FHWA has consulted with the Colorado State Historic Preservation Officer (SHPO) pursuant to 36 CFR 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. Section 470f); and

WHEREAS, FHWA has consulted with the Colorado Department of Transportation (CDOT) regarding the effects of the undertaking on historic properties and has invited CDOT to sign this MOA as an invited signatory; and

WHEREAS, in accordance with 36 CFR 800.6(a)(1), FHWA has notified the Advisory Council on Historic Preservation (Council) of its adverse effect determination with specified documentation, and the Council has elected not to participate in the consultation pursuant to 36 CFR 800.6(a)(1)(iii); and

WHEREAS, the historic property that will be affected by the MOA is:

Weber Farm (5LR10725): The Weber Farm and associated farmlands comprise 80 acres. In August 2005, the farm was determined eligible for the NRHP under Criterion A for its association with early 20th century farming in Larimer County. The buildings within the Weber farm complex also display enough integrity to illustrate the importance of small farms during this period and therefore are also eligible under NRHP Criterion C.

NOW, THEREFORE, FHWA and the Colorado SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

STIPULATIONS

The FHWA shall ensure that the following measures are carried out:

I. MITIGATION

The Weber Farm will be recorded prior to the demolition of the main house and chicken brooder so that there will be a permanent record of its history and present appearance. All documentation must be accepted by the SHPO before construction.

A. ARCHIVAL DOCUMENTATION

CDOT shall ensure that the Weber Farm is documented in accordance with the guidance for Level II documentation found in OAHP Form #1595, *Historical Resource Documentation: Standards for Level I, II, III Documentation*. CDOT shall consult with the SHPO to determine appropriate Level II recordation measures.

1.) CDOT shall ensure that all documentation activities will be performed or directly supervised by architects, historians, photographers and/or other professionals meeting the minimum qualifications in their field as specified in the Secretary of Interior's Professional Qualifications Standards (36 CFR 61, Appendix A).

2.) CDOT shall provide originals of all records resulting from the documentation to the SHPO and a local library or archive designated by the SHPO.

II. DURATION

This agreement will be null and void if its terms are not carried out within five (5) years from the date of its execution. Prior to such time, FHWA may consult with the other signatories to reconsider the terms of the agreement and amend it in accordance with Stipulation IV below.

III. MONITORING AND REPORTING

Each year following the execution of this agreement until it expires or is terminated, FHWA shall provide all parties to this agreement a summary report detailing work undertaken pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes and/or objections received in FHWA's efforts to carry out the terms of this agreement. Failure to provide such summary report may be considered noncompliance with the terms of this MOA pursuant to Stipulation V, below.

IV. DISPUTE RESOLUTION

Should any party to this agreement object at any time to actions proposed or the manner in which the terms of this MOA are implemented, FHWA shall consult with the objecting party(ies) to resolve the objection. If FHWA determines, within 30 days, that such objection(s) cannot be resolved, FHWA will:

A. Forward all documentation relevant to the dispute to the Council in accordance with 36 CFR 800.2(b)(2). Upon receipt of adequate documentation, the Council shall review and advise FHWA on the resolution of the objection within 30 days. Any comment provided by the Council, and all comments from the parties to the MOA, will be taken into account by FHWA in reaching a final decision regarding the dispute.

B. If the Council does not provide comments regarding the dispute within 30 days after receipt of adequate documentation, FHWA may render a decision regarding the dispute. In reaching its decision, FHWA will take into account all comments regarding the dispute from the parties to the MOA.

C. FHWA's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged. FHWA will notify all parties of its decision in writing before implementing that portion of the Undertaking subject to dispute under this stipulation. FHWA's decision will be final.

V. AMENDMENTS AND NONCOMPLIANCE

If any signatory to this MOA, including any invited signatory, determines that its terms will not or cannot be carried out or that an amendment to its terms must be made, that party shall immediately consult with the other parties to develop an amendment to this MOA pursuant to 36 CFR 800.6(c)(7) and 800.6(c)(8).

The amendment will be effective on the date a copy signed by all of the original signatories is filed with the Council. If the signatories cannot agree to appropriate terms to amend the MOA, any signatory may terminate the agreement in accordance with Stipulation VI, below.

VI. TERMINATION

If the MOA is not amended following the consultation set out in Stipulation IV above, it may be terminated by any signatory or invited signatory. Within 30 days following termination, the FHWA shall notify the signatories if it will initiate consultation to execute an MOA with the signatories under 36 CFR 800.6(c)(1) or request the comments of the Council under 36 CFR 800.7(a) and proceed accordingly.

Execution of this Memorandum of Agreement by FHWA and Colorado SHPO and the submission of documentation and filing of this document with the Council pursuant to 36 CFR 800.6(b)(1)(iv) prior to FHWA's approval of this undertaking, and implementation of its terms evidence that FHWA has taken into account the effects of this undertaking on historic properties and afforded the Council an opportunity to comment.

SIGNATORIES:

Federal Highway Administration

Michael E Vandehoy — 2-9-07

/s/ David Nicol, P.E., Division Administrator — Date

Colorado State Historic Preservation Officer

Mark Wolfe — 1/23/07

for Georgianna Contiguglia, SHPO — Date

INVITED SIGNATORY:

Colorado Department of Transportation

Jennifer Finch — 1/07/07

Tom Norton, Executive Director — Date

COLORADO
HISTORICAL
SOCIETY

The Colorado History Museum 1300 Broadway Denver, Colorado 80203-2137

May 7, 2007

Brad Beckham
Manager, Environmental Programs Branch
Colorado Department of Transportation
Environmental Programs Branch
4201 East Arkansas Avenue
Denver, CO 80222

Re: CDOT Project STA 402A-003, State Highway 402 EA, Level II Documentation, Weber Farm. (CHS #37440)

Dear Mr. Beckham,

Thank you for your correspondence dated April 24, 2007 and received by our office on April 26, 2007 regarding the above-mentioned project. After review of the submitted information, we have determined that the documentation meets the Level II requirements.

If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

Mark Wolfe

For Georgianna Contiguglia
State Historic Preservation Officer

MEMORANDUM

DEPARTMENT OF TRANSPORTATION

4201 East Arkansas Avenue
Denver, Colorado 80222
(303) 757-9011

TO: Carol Parr, Region 3

FROM: Robert Autobee, Staff Historian, Environmental Programs Branch

DATE: May 14, 2007

RE: Historic Clearance — State Highway 402, Level II Documentation, Project STA 402A-003, State Highway 402 EA, Larimer County SA 12509

On May 7, 2007, the State Historic Preservation Officer (SHPO) accepted this office's Level II Documentation of the Weber Farm (5LR10725). There will be an adverse effect to two buildings associated with the farm resulting from improvements to State Highway 402. Attached is a copy of the SHPO's acceptance letter.

The SHPO's decision confirms that CDOT complies with both Section 106 and HABS/HAER Level II Documentation of this historic resource. In November 2006, the Federal Highways Administration (FHWA) concurred with our findings of 4(f) *de minimis* for four other resources associated with this project. The SHPO's concurrence on the Level II documentation means that your office is cleared to proceed with the project. If you have any further questions regarding this process, please contact me at (303) 757-9758.

cc: File/CF

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

Environmental Programs Branch
4201 East Arkansas Avenue
Denver, Colorado 80222
(303) 757-9259

DEPARTMENT OF TRANSPORTATION

September 29, 2006

Mr. David A. Nicol, PE
Division Administrator
FHWA - Colorado Division
12300 W. Dakota Avenue, Suite 180
Lakewood, CO 80228

SUBJECT: Finding of Section 4(f) *De Minimis* Impact, Project STA 402A-003, State Highway 402 from US 287 to I-25, Larimer County

Dear Mr. Nicol:

This letter and the attached materials constitute a request for review and concurrence on a finding of *de minimis* impact for the project referenced above, which will improve mobility and safety along four miles of State Highway 402 from US Highway 287 east to I-25 in Larimer County. Four sites in the project area have been determined eligible for listing on the National Register of Historic Places: the Big Thompson Manufacturing Ditch (5LR10726), Weber Farm East (5LR11249); Johnson Mountain View Farm (5LR11242) and Propp Farm (5LR11247).

Project Effects

1) **Big Thompson Manufacturing Ditch (5LR10726):** In the project corridor the ditch is piped underneath SH 402. The project will expand the roadway from two lanes totaling 32 feet in width, to four lanes, a 16-foot median, shoulders, bike lanes and slopes for a total width of 108 feet. The widening will add an extra 76 feet to the existing pipe, which will result in *no adverse effect* to the overall Big Thompson Manufacturing Ditch.

2) **Weber Farm East (5LR11249):** The only impacts to the farm site are the acquisition of a 25-foot permanent utility easement along the front of the property. Except for the loss of a cottonwood tree, which is not considered part of the property's historic landscape, the project will not affect any physical features. Currently, utility poles and an existing easement are in front of the property. CDOT has determined that the project will result in *no adverse effect* to Weber Farm East.

3) **Mountain View Farm (5LR11242):** The project will taper SH 402 from four to two lanes at the I-25 interchange adjacent to the Mountain View Farm. The additional proposed right-of-way for SH 402 is 35 feet wide and 1,935 feet long. Potential physical improvements will remain south of the farm's existing fence line. The shoulder for the expanded SH 402 will end at the current fence; however, fill slopes associated with the construction will intrude further to the north. Possible impacts to the features associated with the farm within the expanded right-of-way include the potential loss of a bank of weedy species trees located at the front of the house within the historic boundary. CDOT has determined that the project will result in *no adverse effect* to the Mountain View Farm.

4) **Propp Farm (5LR11247):** Construction of SH 402 will move the road's alignment to the north. The lone impact to the farm site is the acquisition of a 25-foot wide by 410-foot long permanent utility easement along the front of the property. Except for the possible loss of several trees first planted in the 1960s, there are no planned impacts to the Propp Farmstead. CDOT has determined that the project will result in *no adverse effect*.

Finding of *De Minimis* Impact

The initial Section 106 consultation with the SHPO on eligibility determinations took place in November 2004, with additional information submitted in May 2005. In March 2006, CDOT again provided additional information to the SHPO regarding expansion of the Area of Potential Effects (APE), effects determinations and notification of Section 4(f) *de minimis* findings. In correspondence dated March 30 and September 13, 2006, the SHPO concurred with CDOT's determination that the project would result in no *adverse effect* to the four sites listed above. In correspondence dated March 10, 2006 and August 15, 2006, the Loveland Historic Preservation Commission was afforded an opportunity to comment on the Section 106 findings and was notified of the intent to make a *de minimis* finding for this historic resource. We did not receive a response from the Commission on either of these requests within the 30-day review period. Copies of the pertinent Section 106 correspondence are attached for your review.

Based on the information presented above and on the attached documentation, the effects of the project on the historic properties noted above constitute a *de minimis* impact and the requirements of 23 USC 138 and 49 USC 303 have been satisfied. This finding is considered valid unless new information is obtained or the proposed effects change to the extent that consultation under Section 106 must be reinitiated.

If you concur with this finding, please sign below. If you have questions about the project or the findings, please contact CDOT Assistant Staff Historian Bob Autobee at (303)757-9758.

Very truly yours,

for Brad Beckham, Manager
Environmental Programs Branch

Enclosures: Section 106 correspondence
Site forms
Plan sheets

cc: Carol Parr, Region 4
File/CF/RF

I concur: _____ 11/15/06
(date)

for David A. Nicol, PE
Administrator, Colorado Division
Federal Highway Administration

Appendix B

Wetland Finding Report

Appendix B
Wetland Finding Report
State Highway 402 from US 287 East to the I-25 Interchange
Environmental Assessment
CDOT Project Number STA 402A-003
Larimer County, Colorado

Appendix B. Wetland Finding Report State Highway 402 from US 287 East to the I-25 Interchange Environmental Assessment CDOT Project Number STA 402A-003 Larimer County, Colorado

B.1 Introduction

This wetland finding report has been written in compliance with Executive Order (EO) 11990, *Protection of Wetlands*, and in accordance with 23 CFR 771, 23 CFR 777, and Technical Advisory T6640.8A. These publications mandate that wetlands be avoided wherever possible and impacts minimized to the extent practicable for highway projects. The project (Preferred Alternative) consists of widening a 4-mile segment of State Highway 402 (SH 402) between United States Highway 287 (US 287) and Interstate 25 (I-25) from two lanes to four lanes to improve safety and mobility. SH 402 is located on the east side of Loveland, Colorado, in Larimer County. This wetland finding is part of an Environmental Assessment (EA).

Wetlands and other waters of the US are regulated under Section 404 of the Clean Water Act (CWA) and administered by the US Army Corps of Engineers (USCOE). Regulation is limited to jurisdictional areas defined by USCOE CFR 33, Section 323 guidelines (USCOE-DoD 1996). Past litigation (*Solid Waste Agency of Northern Cook County [SWANCC] versus US Army Corps of Engineers*, No. 99-1178 [January 9, 2001]) has limited jurisdictional wetlands to wetlands that are contiguous with or connected by surface water flow to waters of the US or other navigable waters or their tributaries. Permitting or reporting may be required for any dredge or fill activities that affect these USCOE jurisdictional areas. EO 11990 requires that federal agencies "take action to minimize the destruction, loss or degradation of wetlands."

No exclusion of isolated wetlands is indicated in EO 11990. Further guidance by Federal Highway Administration (FHWA) regulations (CFR 23 Sections 771 and 777) and FHWA Technical Advisory T6640.8A (Section V, G, 12) direct that impacts on wetlands be avoided wherever possible and minimized to the extent practicable for highway construction projects. The Colorado Department of Transportation (CDOT) requires mitigation for all wetlands, including nonjurisdictional wetlands. Proposed legislation (February 27, 2003) that would restore the isolated wetlands to federal jurisdiction has been submitted to the US Senate (S-473) and the US House of Representatives (HR-962).

B.2 Project Background

State Highway 402 (SH 402) is a heavily used two-lane, east-west arterial connecting United States Highway 287 (US 287, also known as Lincoln Avenue) and Interstate 25 (I-25).[1] This 4-mile highway is located south of the city of Loveland in Larimer County, Colorado. SH 402 serves local residents and businesses, and is used as a commuter route to I-25. This Environmental Assessment (EA) encompasses

[1] Subsequent to the 2004 action resulting in this Wetland Finding Report, the area between US 287 and CR 13C is being widened to a four-lane highway by developers in coordination with the city of Loveland and CDOT CDOT under a Categorical Exclusion, dated September 18, 2003, so as not to preclude other potential improvements to the roadway. No wetlands were identified in the area between US 287 and CR 13C, thus no changes were made to this report.

the entire 4-mile length of SH 402. Access to a carpool lot (approximately 88 spaces) located at the southwest quadrant of the SH 402 and I-25 interchange was included as a part of this study. Potential improvements at the I-25 interchange are being addressed under the current *North I-25 Environmental Impact Statement*.

This EA was undertaken to investigate mobility and safety improvements along this corridor. Analysis included assessment of both current travel conditions and projections for 2030 in order to identify and address both current and future needs.

B.3 Project Location

The corridor for the proposed project extends along SH 402 from the US 287 interchange east to I-25 in Loveland, Colorado. The study area is almost entirely on the Loveland 7.5-minute United States Geological Survey (USGS) quadrangle map, with a small eastern portion (0.3 mile) on the Windsor quadrangle map. Legal location is T5N, R69W, Sections 24, 25; R68W, Sections 19, 20, 21, 22, 27, 28, 29, 30 (Figure B-1). Elevation in the corridor ranges from about 4,932 to 4,969 feet above mean sea level.

B.4 Project Description

The proposed SH 402 improvements would widen the existing two-lane highway to four lanes. Because the eastern and western parts of the corridor have different designations and characteristics, two different highway templates were considered:

- an urban cross section from US 287 east to CR 13C with a 150-foot right-of-way
- a rural cross section from CR 13C east to the I-25 interchange with a 135- to 150-foot right-of-way

An urban cross-section has been developed from US 287 east to CR 13C. The design includes:

- 150-foot right-of-way
- 18 to 26 feet set aside for a raised median and left turn lane in the center of the highway
- four 12-foot general-purpose travel lanes (two in each direction)
- two 7-foot bike lanes (one in each direction)
- two 12-foot auxiliary lanes (one in each direction)
- two 6-foot sidewalks separated from the highway by approximately 10 feet (where space permits)
- curb and gutter
- 25-foot utility corridor easement along the south side of the highway

The rural cross section is from CR 13C east to the I-25 interchange. The design features include:

- 135- to 150-foot right-of-way
- four 12-foot general-purpose travel lanes (two in each direction)
- 16-foot painted median that serves as a continuous left turn lane
- two 10-foot shoulders that include a 7-foot bike lane separated from the highway by 3 feet
- 25-foot utility corridor easement on the south side of the highway

B.5 Project Alternatives

The SH 402 project was developed to address mobility and safety concerns about the current highway, including lack of left turn lanes (causing traffic backups behind turning vehicles); unsafe conditions for car breakdowns, pedestrians, and bicyclists because of narrow road shoulders; and uncontrolled access points on the existing highway. The following four action alternatives, along with the No Action Alternative, were studied:

- #1 Hold Centerline: holding the current centerline and widening on both the north and south sides
- #2 Hold North Edge of Right-of-Way: holding the north edge of the right-of-way and widening on the south side
- #3 Hold South Edge of Pavement: holding the south edge of the pavement and widening on the north side
- #4 Meander Alternative: creating a meandering alignment to avoid sensitive sites

The Meander Alternative was identified as the Preferred Alternative because it minimizes impacts on the human and natural environments.

B.6 Wetland Considerations

Section 404 (b)(1) of the CWA provides guidelines to protect aquatic ecosystems, including the precept that dredged or fill material should not be discharged into aquatic ecosystems unless it can be demonstrated that such discharges would not have unacceptable adverse impacts either individually or in combination with known and/or probable impacts of other activities on the aquatic ecosystems of concern. Therefore, no such discharge shall be permitted if a practicable alternative to the preferred action would have less impact on aquatic ecosystems. Part of the screening criteria for alternatives included impacts on wetlands and other waters of the US.

Because most wetlands in the study area are close to the current roadway alignment, total avoidance would not be possible. However, avoiding wetlands to the greatest extent possible in some parts of the project corridor meant that residences would be impacted. To avoid such impacts to the greatest extent possible, the Meander Alternative was identified as the most practicable (and Preferred) alternative.

B.7 Wetlands

Wetland delineations were conducted in accordance with 1987 USCOE guidelines by Loren Hettinger (J.F. Sato and Associates) on August 24 and 25, 2001; October 25, 2001; and March 13, 2003. USCOE and CDOT Region 4 staff inspected wetland delineations on May 19, 2004. A letter regarding concurrence with USCOE on the delineations and mapping is included as Appendix B2 (June 1, 2004).

The study area is part of the plains zone (Weber and Wittmann 2001), but most of the area has been converted to irrigated crop production or residential and commercial developments. The most valuable native habitat that remains in the study area is the riparian or streamside habitat. Dominant native plant species in riparian habitats include peach-leaved willow (*Salix amygdaloides*), sandbar willow (*S. exigua*), plains cottonwood (*Populus deltoides* ssp. *monilifera*), showy milkweed (*Asclepias speciosa*), and Emory sedge (*Carex emoryi*). Native upland prairie plants remain in several lowland pastures toward the eastern end of the study area and include fringed sage (*Artemisia frigida*), Canada wild rye (*Elymus canadensis*),

sand dropseed (*Sporobolus cryptandra*), wild sunflower (*Helianthus annuus*), and rubber rabbitbrush (*Chrysothamnus nauseosus*).

Wetlands were identified and mapped using aerial photograph interpretation and information collected in field surveys when data were obtained to determine wetland boundaries. Aerial photography used for initial wetland identification and to assist with delineations included color photography obtained in 2001 with a 2-foot-pixel resolution and gray-scale photography obtained in 2002 with a 0.5-foot-pixel resolution. Wetlands were mapped in an area approximately 1,600 feet on either side of SH 402. The project location showing the road footprint and wetlands identified are indicated in Figure B-2 through Figure B-5. Field data consisted of recording information on the vegetation, soils, and hydrology of areas that appeared to contain wetland features (see Appendix B1). The type of data taken and methods followed 1987 USCOE delineation guidelines as noted.

Wetlands in the study area consist of Palustrine Emergent Persistent (PEMP) as defined by Cowardin et al. (1979) and one area of Palustrine Forested/Emergent Persistent (PFO/EMP) that occurs along the Big Thompson River (see Figure B-2 through Figure B-5).

The diagnostic plant species of the wetlands in this area included a relatively wide range, depending on site hydrology and using the indicator status developed by Reed (1988).

Legend for all wetland indicator categories (Reed 1988):

UPL	Upland	Occurs in upland sites, 99 percent probability
FACU	Facultative Upland	Occurs in nonwetland sites, 67 to 99 percent probability
FAC	Facultative	Equal probability of occurring in wetland and upland sites
FACW	Facultative Wetland	Occurs in wetlands, 67 to 99 percent probability
OBL	Obligate Wetland	Almost always occurs in wetlands, 99 percent probability
+		Frequency toward the higher end of the probability category
ND	No Designation	No designation

Site 1. This site was initially delineated as a wetland, but subsequent field inspections with Terry McKee of USCOE (May 19, 2004) indicated that hydrology is insufficient to support wetland conditions (see Appendix B2, USCOE letter).

Site 2. This site is located on the Sandra Sparks Olsen Trust property 1.5 miles west of I-25 (see Photograph B-1). Land use includes a livestock-hog farm operation and residence. A cattail marsh is located on the west side of the farm buildings in an old meander channel south of the Big Thompson River on the north side of SH 402. A pond that is located approximately 0.25 mile northwest of SH 402 along the drainage is probably man-made and surrounded by Russian-olive trees. This wetland is classified as Palustrine Emergent (PEM).

Vegetation	Broad-leaved cattail (*Typha latifolia*) – OBL Showy milkweed (*Asclepias speciosa*) – FAC Willowherb (*Epilobium hornemannii*) – FACW Watercress (*Nasturtium officinale*) – OBL Rabbitfootgrass (*Polypogon monspeliensis*) – OBL Spikerush (*Eleocharis palustris*) – OBL Peach-leaved willow (*Salix amygdaloides*) – OBL Russian-olive (*Elaeagnus angustifolia*) – ND
Hydrology	Saturated soils, water table at surface or above in center of the swale.
Soils	Mucky, saturated silt. Dark gray (Munsell 1992 Color Charts; 10 YR 4/1) 4 to 12 inches, black (10 YR 2/1) > 12 inches.
Functions	Groundwater recharge, floodflow alteration, sediment/toxicant retention, production export, wildlife diversity.

Photograph B-1. Looking southwest over Site 2; SH 402 in the distance

Site 3. This site is located approximately 30 yards west of Site 2 (see Photograph B-2). It is a higher terrace of the old meander channel and contains wetlands of wiregrass/Baltic rush and giant wild rye. This wetland is classified as PEM.

Vegetation	Giant wild rye (*Leymus cinereus*) – UPL Longstyle rush (*Juncus longistylis*) – FACW Baltic rush (*Juncus arcticus*) – FACW Showy milkweed (*Asclepias speciosa*) – FAC
Hydrology	Sandy deposits on soil. Likely high water table in spring.
Soils	Brown (7.5 YR 4/3) loamy sand to 4 inches depth, brown sandy silt matrix with frequent reddish-yellow (7.5 YR 6/8) mottles from 4 to 12 inches.
Functions	Groundwater recharge, floodflow alteration, sediment stabilization, production export, wildlife diversity.

Photograph B-2. View north from SH 402 over Sites 2 (cattails) and 3 (wetland species on left edge foreground)

Site **4.** This site is located approximately 1.8 miles west of I-25 on the north side of SH 402 (see Photograph B-3). It is owned by Magpie Petroleum Operations Company and leased for grazing to Jim Wooldridge of Loveland, Colorado. The land consists of irrigated pasture with alkali deposits visible on the soil surface. This wetland is classified as PEM.

Vegetation	Salt-grass (*Distichlis stricta*) – FACW Baltic rush (*Juncus arcticus*) – FACW Longstyle rush (*Juncus longistylis*) – FACW
Hydrology	Periodically flooded through irrigation, and naturally high water table.
Soils	Moist with gleyed conditions below approximately 4 inches.
Functions	Groundwater recharge, floodflow alteration, sediment stabilization.

Photograph B-3. Looking east over Site 4; SH 402 seen at top right of photograph

Irrigation Ditch A. This irrigation ditch crosses SH 402 approximately 0.5 mile west of CR 9E. It contains wetlands of reed canarygrass and Emory sedge in a band 3 feet wide along both banks. This wetland is classified as PEM.

Vegetation	Reed canarygrass (*Phalaroides arundinacea*) – FACW+ Emory sedge (*Carex emoryi*) – OBL
Hydrology	Periodically flooded through irrigation.
Soils	Saturated during irrigation flows.
Functions	Groundwater recharge, floodflow alteration.

Site 5A. This site is near a business and residence owned by Ralph Ollila. It is located between CR 13C and CR 11H (South Boise Avenue) on the north side of SH 402 (see Photograph B-4). The site occurs on the south side of the Big Thompson River on a low terrace. The area exhibiting wetland vegetation extends 3 to 5 feet from the edge of the active channel toward the bank. This wetland is classified as Palustrine Forested/Emergent (PFO/EM).

Vegetation	Plains cottonwood (*Populus deltoides* ssp. *monilifera*) – FAC Reed canarygrass (*Phalaroides arundinacea*) – FACW+ Showy milkweed (*Asclepias speciosa*) – FAC Emory sedge (*Carex emoryi*) – OBL Curly dock (*Rumex crispus*) – FACW Peach-leaved willow (*Salix amygdaloides*) – OBL Sandbar willow (*Salix exigua*) – OBL
Hydrology	At edge of active flow channel, seasonally flooded.
Soils	Saturated at 6 inches deep.
Functions	Groundwater recharge, floodflow alteration, production export, sediment stabilization, aquatic diversity, wildlife diversity, recreation, and uniqueness.

Photograph B-4. View from CR 13C bridge looking east along Big Thompson River; Site 5B (left) and Site 5A (right)

Site 5B. This site is on a lower terrace along the Big Thompson River, similar to and parallel with Site 5A. This wetland is classified as PFO/EM. Site 5B is on the north side of the Big Thompson River and will not be affected by activities on SH 402.

Vegetation	Reed canarygrass (*Phalaroides arundinacea*) – FACW+ Vervain (*Verbena hastata*) – FACW Emory sedge (*Carex emoryi*) – OBL
Hydrology	Seasonally flooded.
Soils	Saturated at 6 inches deep.
Functions	Similar to Site 5A.

Site 6. This site is probably another old meander off the Big Thompson River and is located approximately 1.75 miles east of US 287 and across SH 402 from the Ollila property (Site 5A). This property also displayed a Magpie Petroleum sign and contained a slough area that was ditched to the road, with a culvert that drains the area to the river (see Photograph B-5). This wetland is classified as PEM.

Vegetation	Reed canarygrass (*Phalaroides arundinacea*) – FACW+ Canada thistle (*Breea arvense*) – FACU Broadleaf cattail (*Typha latifolia*) – OBL
Hydrology	Drainage area that is periodically saturated.
Soils	Seasonally saturated soils, with mottles.
Functions	Groundwater recharge, floodflow alteration, sediment stabilization, sediment/ toxicant retention, wildlife habitat.
Soils	Soils very dark gray (5 YR 3/1) below approximately 4 inches, indicating usual saturation; silty clay texture.

Photograph B-5. Looking south from SH 402 right-of-way over a cattail marsh (Site 6)

Function. The wetlands in the study area primarily function as groundwater recharge, flood flow alteration, sediment stabilization and retention, and toxicant retention. These wetlands perform a valuable function in treating runoff from grazing areas, a feedlot, other developed areas (for example, parking lots), and SH 402. The wetlands along the Big Thompson River provide wildlife habitat for a variety of birds, small mammals, mule deer, and white-tailed deer.

Jurisdiction. Most of the wetlands were determined jurisdictional to Section 404 of the CWA in that they are tributaries of or have nexus to waters of the US (for example, the Big Thompson River). The exception is Site 4, which is supported by a seep and not connected to waters of the US, and is, therefore, considered to be an "isolated water" (see USCOE letter, 2004).

B.8 Wetland Impacts

Project Impacts. Based on Geographic Information Systems (GIS) calculations derived from overlaying the proposed highway footprint onto the wetlands map, approximately 0.893 acre of wetlands would be permanently affected by fill actions to expand the roadbed (Table B-1). The construction footprint (toe-of-fill) overlap onto wetlands is shown in Figure B-2 through Figure B-5.

An additional area 5 feet wide at the edge of the cut-and-fill area was included in impact calculations. This area was designated to ensure that permanent impacts are not underestimated.

Of the total, approximately 0.453 acre is considered jurisdictional to Section 404 of the CWA (Sites 2, 3, 5A, and 6 and Irrigation Ditch A). Site 4 (0.440 acre affected) is considered nonjurisdictional.

Table B-1. Permanent and Temporary Wetland Impacts of the Meander Alternative

Wetland Site No.	Permanent Impacts, Acres	Temporary Impacts, Acres
Jurisdictional		
2	0.234	0.03
3	0.124	0.01
Irrigation Ditch A	0.061	<0.01
5A	<0.005	0.01
6	0.029	0.01
Jurisdictional total	**0.453**	**0.06**
Nonjurisdictional		
4	0.440	0.03
Totals	**0.893**	**0.09**

Temporary impacts were identified from an area 10 feet wide along and outside the edge of the area of permanent impacts. This area would be affected by placing/removing silt fencing and wetland exclusion-protection fencing, removal/relocation of fencing and fence posts, and removal/replacement of culverts.

Based on these assumptions, temporary impacts of 0.09 acre from construction activities were estimated to affect wetlands (Table B-1). These impacts are to be reclaimed and revegetated with appropriate wetland species after construction.

Because project impacts on jurisdictional wetlands were calculated to be less than 0.5 acre and affect nontidal and adjacent wetlands, a Nationwide Permit 14 is appropriate for this project (Carey 2004).

Secondary impacts offsite have the potential to affect wetlands during construction activities unless best management practices (BMPs) are implemented and followed. These indirect impacts include disturbance from construction equipment, sedimentation from runoff and erosion from construction areas, and contamination from equipment servicing areas.

Impacts on wetlands were addressed in a _____ 404 permit application submitted to the US Army Corps of Engineers on _____ 2003 (Permit Number _____) by CDOT, Region 4 _____. (To be submitted after EA publication.)

Cumulative Impacts. Project area wetlands have been affected by past activities, such as agricultural development, road construction, and residential and commercial development.

Additional development planned for this area, especially along the western part of the corridor, converts land from agricultural use. Impacts on wetlands and other waters of the US include increased erosion, sedimentation, and rapid runoff from paved and nonvegetated surfaces, leading to stream incision and loss of wetland hydrology, area invasion by weed and nonnative plant species, and increased concentrations of chemicals such as nitrogen, phosphorus, and heavy metal.

Approximately 0.893 acre of wetlands will be permanently affected by fill actions to expand the roadbed, of which 0.453 acre is jurisdictional. An additional area extending 5 feet from the cut-and-fill line has been included to ensure that impacts were not underestimated.

B.9 Mitigation Measures

Project wetland mitigation is proposed at several sites along SH 402 for jurisdictional wetlands (0.453 acre) and at Big Thompson Ponds SWA for nonjurisdictional wetlands (0.440 acre).

B.9.1 SH 402 Sites

Locations. Possible mitigation sites along SH 402 include Sites 2/3 and Site 6, cattail marshes near SH 402 (see Photograph B-2 and Photograph B-5).

Concept. The concept at these sites is to expand the wetlands onto terraces that occur adjacent to the marshes. Approximately 0.453 acre of wetlands is planned for the sites to coincide with losses to 404 jurisdictional wetlands from road construction. The upper terraces of these former meander bends of the river will be lowered approximately 1 foot toward groundwater that occurs in this system. However, the amount of excavation will need to be determined from groundwater observations from wells (PVC perforated pipe). It is recommended that these wells be installed several seasons before construction to ensure that groundwater is available within a depth that is reasonable for excavation. Wells will be installed 2 years prior to design, and data collected each week during the growing season and once every two weeks during the rest of the year. CDOT will approve the number of wells and their locations. The concept includes providing a surface that is slightly drier than the inundated habitat that supports cattails. This will promote more successful competition by the planted species. Cattails species my also be controlled by cutting these plants below water line, thus limiting oxygen availability and killing the plants (Sale and Wetzel 1983). Suggested plant species for this site include arctic rush (*Juncus arcticus*), longstyle rush (*Juncus longistylis*), Emory sedge (*Carex emoryi*), hard stem bulrush *(Schoenoplectus lacustris* ssp. *acutus),* small-winged sedge *(Carex microptera*), and bluejoint reedgrass. A combination of live plantings and seed is recommended for these sites.

Wetland creation could be accomplished at either Sites 2/3 or Site 6. This would extend the terrace that occurs adjacent to the cattail marshes by lowering the ground surface enough to allow wetland plants to root close to the shallow groundwater table. See Figure B-6 and Figure B-7.

B.9.2 Big Thompson Ponds State Wildlife Area (SWA) Mitigation Area

Location. This mitigation site is located approximately 0.75 mile north of SH 402 and 0.25 mile west of I-25 (NE ¼, Section 21, NW ¼, Section 22, R68W, T5N). See Figure B-8.

Concept. The concept for this site consists of a comprehensive plan for wetland development, wetland and riparian habitat enhancement, and upland habitat improvement. Approximately 0.440 acre of wetlands (or equivalent in terms of obtaining wetland mitigation credit for enhancement and improvement measures) may be developed in this area to offset nonjurisdictional impacts. The concept includes reducing spoil areas that were left after gravel mining changing the shoreline at the edges of gravel ponds to increase wetland and habitat diversity. Another mitigation measure that may be considered includes habitat enhancement by removal of weedy species that have invaded the site, including Canada thistle, teasel, and Russian-olive. Possible mitigation ratios include 1:1 for wetland development, 3:1 for riparian habitat enhancement, and 5:1 for weed control.

Wells will be installed 2 years prior to design, and data collected each week during the growing season and once every two weeks during the rest of the year.

As described for the SH 402 sites, the Big Thompson Ponds area may require a set of monitoring wells to accurately determine groundwater elevation and thus the amount of soil that must be removed prior to wetland plantings. CDOT will approve the number of wells, their locations, and the duration of monitoring.

Suggested species for this Big Thompson Ponds SWA site include:

Wetland. Live material will be used to establish wetland communities, including peach-leaved willow, sandbar willow, Emory sedge, wooly sedge, Torrey rush, hard-stemmed bulrush, soft-stemmed bulrush, and bluejoint reedgrass.

Riparian Habitat Enhancement. Weedy species (for example, smaller Russian-olive and teasel) will be removed and replaced with cottonwood, peach-leaved willow, and sandbar willow. Larger Russian-olives should remain to provide wildlife habitat around the ponds and the Big Thompson River.

Noxious Weed Control and Habitat Enhancement. Noxious weed infestations will be treated using FHWA and CDOT standard measures (FHWA Guidance on Invasive Species [1999] and CDOT Integrated Noxious Weed Management Plan 1999–2000 [INWMP]) and planted with wetland and upland species that provide greater habitat function. Suggested species include blue grama, buffalograss, wheatgrass, and saltgrass. *Appendix E* of the SH 402 Environmental Assessment is a project-specific noxious weed management plan and provides additional detailed guidance for weed control activity for this mitigation site.

Possible treatment areas for developing wetlands, enhancing riparian habitats, and controlling weeds are shown in Figure B-8. Photographs of the wetland creation, riparian habitat enhancement, and noxious weed control areas are shown in Photograph B-6, Photograph B-7, and Photograph B-8, respectively.

Photograph B-6. View of upland area in northeast end of Big Thompson Ponds SWA

The location shown in Photograph B-6 is an example of several areas of high ground at this end of the SWA that could be excavated down 1 to 5 feet to bring the surface in closer contact with groundwater. The area could then be planted with species characteristic of palustrine emergent wetland, such as sedges, rushes, and bulrush.

Photograph B-7. Potential location for riparian habitat enhancement at Big Thompson Ponds SWA

As shown in Photograph B-7, weedy species such as Russian-olive could be replaced with native shrubs and trees such as peach-leaved willow and sandbar willow. Additional enhancement of stream banks might also be possible, including removal of debris and armoring of areas where slope failure and bank erosion have been noted by CDOW.

Photograph B-8. One potential integrated weed control area at Big Thompson Ponds SWA

Integrated weed control could reduce or eliminate the current dominance by invasive noxious weed species at this site. Photograph B-8 highlights Russian-olive trees at the SWA's northern parking area, one of many potential areas for integrated weed control.

Indirect Impact Measures. Measures to reduce indirect impacts include keeping siltation fencing and other erosion protection materials in good repair, maintaining perimeter fencing to protect wetlands from construction equipment traffic, and servicing equipment in designated areas at least 100 feet from wetland areas. Sediment basins will be established as part of the highway design for areas with runoff potential. Temporary impacts (such as impacts from replacing culverts and disturbances from placing and removing exclusion fencing, silt fencing, and erosion control material within 10 feet of the edge of fill [toe-of-slope]) will be reclaimed using suggested species (for example, Torrey rush, Baltic rush, small-winged sedge, Emory sedge, and inland saltgrass) from adjacent areas. Soils will be tilled as needed to reduce compaction. Indirect impacts from surface runoff will be controlled using erosion and sediment control measures according to CDOT BMPs, as specified in Specifications No. 107.25 (Water Quality Control) and No. 208 (Erosion Control) from *Standard Specifications for Road and Bridge Construction,* and drainage control studies to determine locations and sizes of detention basins. In addition geotextiles/straw/soil will be applied where feasible to protect wetlands from construction impacts. A stormwater management plan (SWMP) will be developed for use during construction to control accelerated erosion and sedimentation, and contamination from construction equipment. Equipment will only be serviced in designated upland areas to reduce potential impacts on wetlands and drainage areas from fuel, equipment wash, grease, and cleaning agents. Weed control in construction areas must be implemented as part of construction operations.

Functions. Functions will be similar to functions currently being performed by affected wetlands.

Monitoring. CDOT biologists or CDOT-designated contractors will conduct monitoring at SH 402 mitigation sites and at the Big Thompson Ponds mitigation site to ensure that mitigation is successful as required by 404 permit conditions. Plant composition and percent ground cover data will be obtained each growing season, along with groundwater depths. Quantitative data on plant composition and percent ground cover will be obtained each growing season from transects (for example, point-intercept method), with the number of sample points determined from statistical adequacy analyses. Groundwater depths will be measured and recorded each month during the spring to late summer period as part of monitoring activity. Monitoring criteria will be developed in conjunction with USCOE and will likely include a percent foliar cover comparison (for example, 75 percent cover by wetland species) to undisturbed (existing) wetland cover of the sites after several growing seasons. Weed control measures will be implemented as needed to control reinvasions (for example, by Canada thistle) of the sites. Shrub mortality will be monitored using density count data and will also be measured against success criteria designated in the USCOE 404 permit for the project. Should vegetation development at either site fail to meet success criteria, remediation measures to correct problems will be developed by a CDOT landscape architect, or their designated personnel. Because water is available at the mitigation sites and because a near-surface groundwater table also occurs, the likelihood of success is considered high.

Contingency Plans. If the wetland is not developing as planned, remediation measures to correct problems will be indicated. Should wetlands not develop as planned and sites appear to be unsuitable for mitigation measures as designed, other areas near SH 402 would be evaluated for wetland enhancement. Such sites include the Saint Vrain SWA on the Saint Vrain River west of I-25 approximately 14 miles south of the project area. Other sites may occur on private land and may involve further negotiations and expense to modify.

B.10 Conclusions

Based on the above considerations, it is determined that there is no practicable alternative to the proposed new construction, and that the proposed action includes all practicable measures to minimize harm to wetlands. All wetland losses (0.893 acre) will be mitigated with 1:1 replacement.

B.11 References Cited

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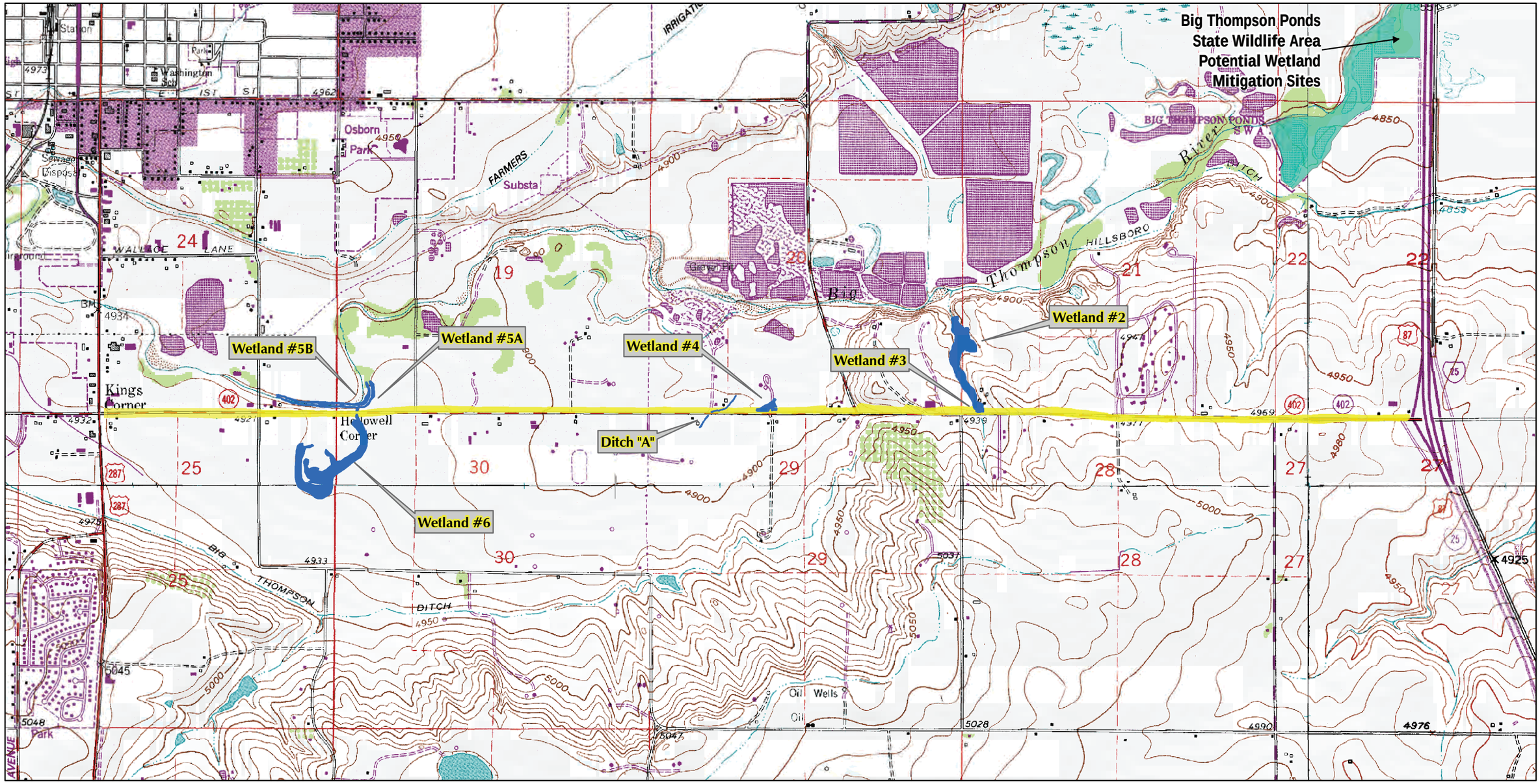
B.12 SH 402 Study Area Wetland Figures



LEGEND

- Wetlands
- Big Thompson Ponds State Wildlife Area

N W E S

0 1,000 2,000 Feet

0 400 800 Meters

SCALE - 1:19,800 or 1" = 1650'

SOURCE: Digital Raster Graphic information provided by the USGS. Parcel information provided by the City of Loveland. Wetlands delineated by JFSA. Map produced April 27, 2004 by JFSA

7.5' Quadrangle maps are the Loveland, Windsor, Berthoud, and Johnstown Quads with a contour interval of 10-feet.

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DOT DEPARTMENT OF TRANSPORTATION

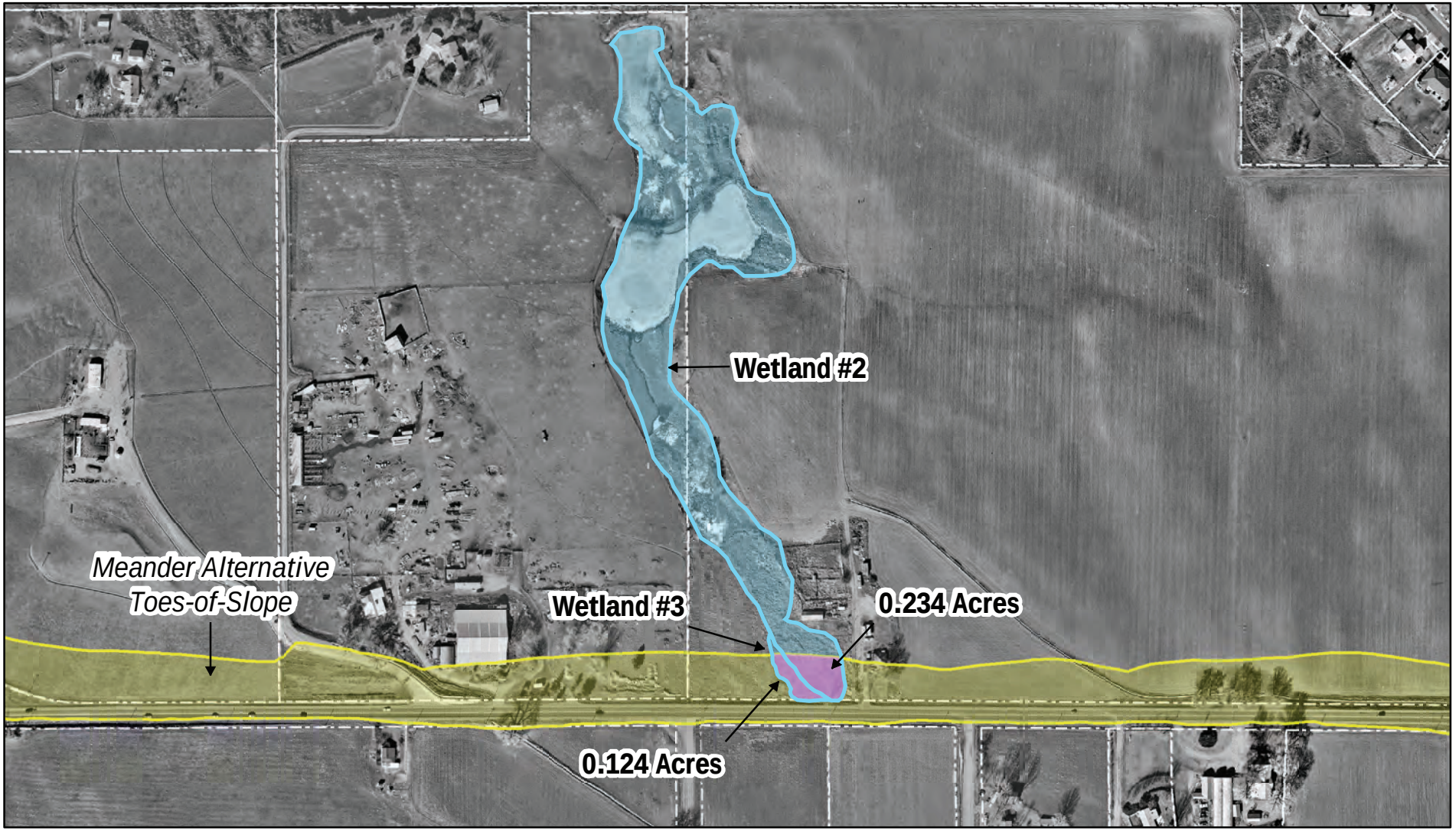
JFSA J.F. SATO AND ASSOCIATES

DOT SH 402 Environmental Assessment

State Highway 402 EA

Wetlands

FIGURE B-1



LEGEND

- Wetland Boundary
- Wetland Impact
- Meander Alternative Toes-of-Slope Plus 5-Foot Addition

N
W E
S

SCALE - 1:4,200 or 1" = 350'

0 100 200 Meters

0 250 500 Feet

SOURCE: 2000 aerial photography provided by Airphoto USA / KRPS. Land use and parcel information provided by the City of Loveland. Wetland information obtained through field observation and aerial photo interpretation by JFSA. Map produced October 29, 2004 by JFSA.

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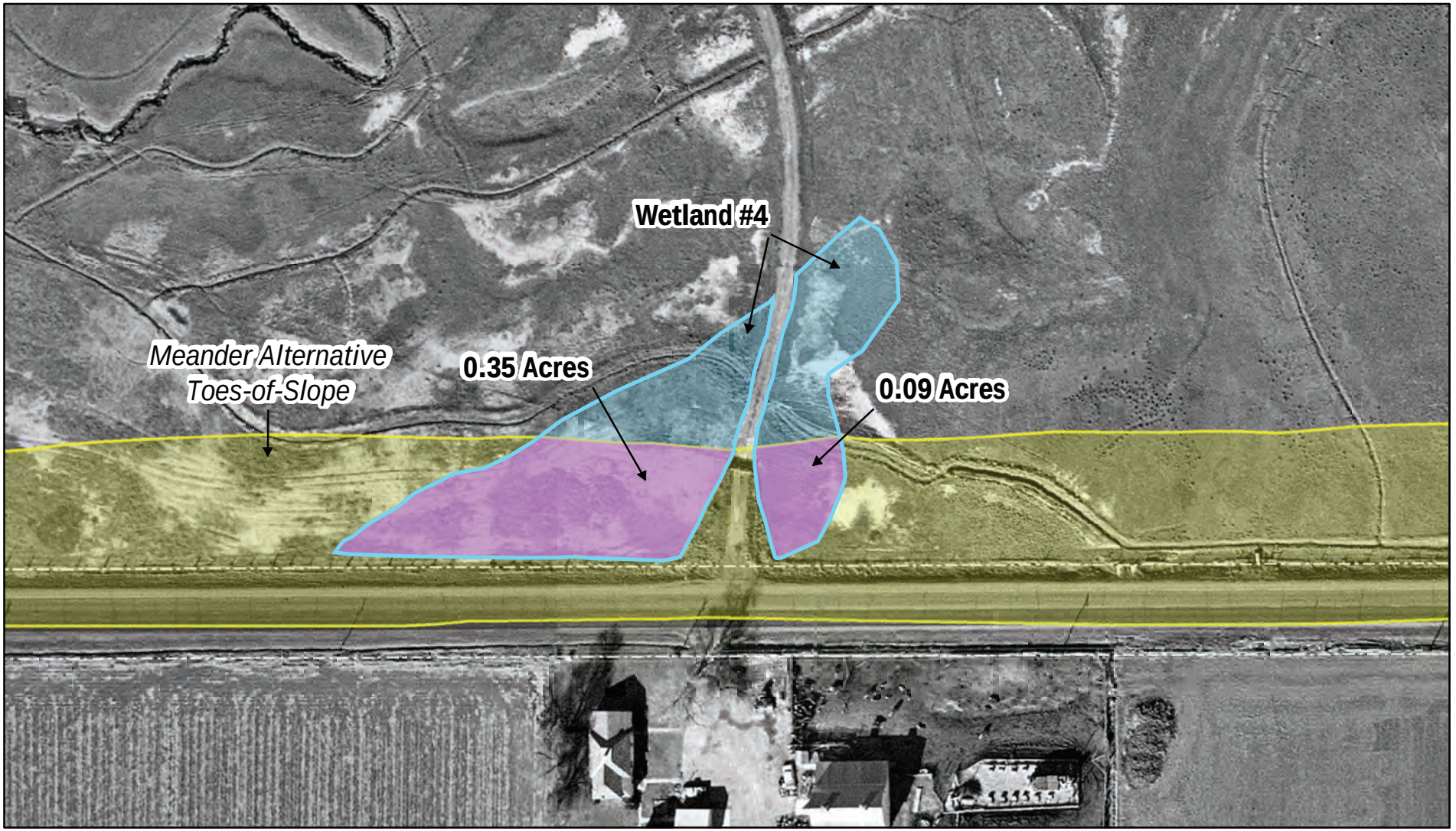
State Highway 402

Wetland Sites 2 and 3

FIGURE B-2



LEGEND

- Wetland Boundary
- Wetland Impact
- Meander Alternative Toes-of-Slope Plus 5-Foot Addition

N
W E
S

SCALE - 1:1,200 or 1" = 100'

0 25 50 Meters

0 50 100 Feet

SOURCE: 2000 aerial photography provided by Airphoto USA / KRPS. Land use and parcel information provided by the City of Loveland. Wetland information obtained through field observation and aerial photo interpretation by JFSA. Map produced October 29, 2004 by JFSA.

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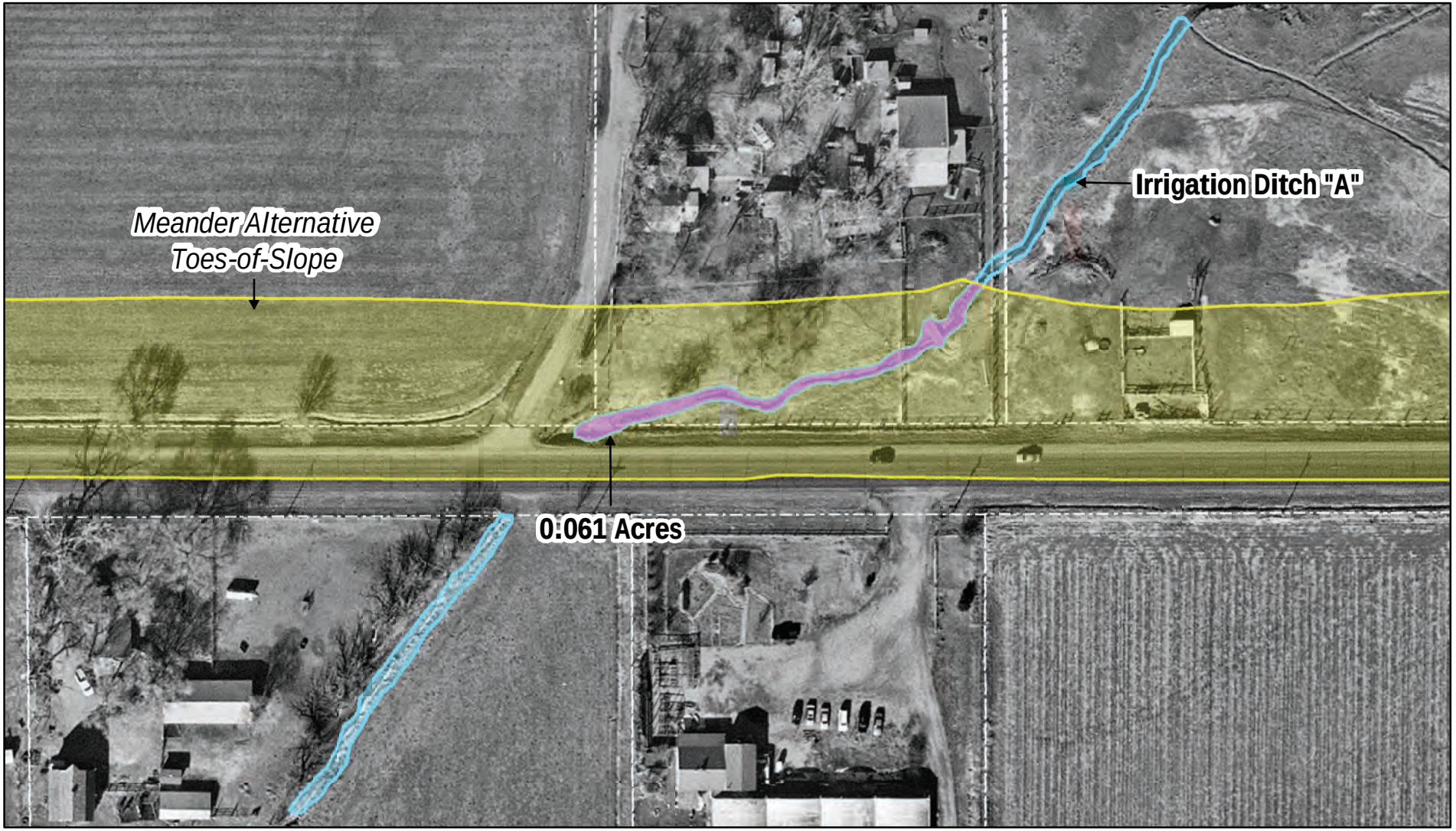
State Highway 402

Wetland Site 4

FIGURE B3



LEGEND

- Wetland Boundary
- Wetland Impact
- Meander Alternative Toes-of-Slope Plus 5-Foot Addition

N
W E
S

SCALE - 1:1,200 or 1" = 100'

0 25 50 Meters

0 50 100 Feet

SOURCE: 2000 aerial photography provided by Airphoto USA / KRPS. Land use and parcel information provided by the City of Loveland. Wetland information obtained through field observation and aerial photo interpretation by JFSA. Map produced October 29, 2004 by JFSA.

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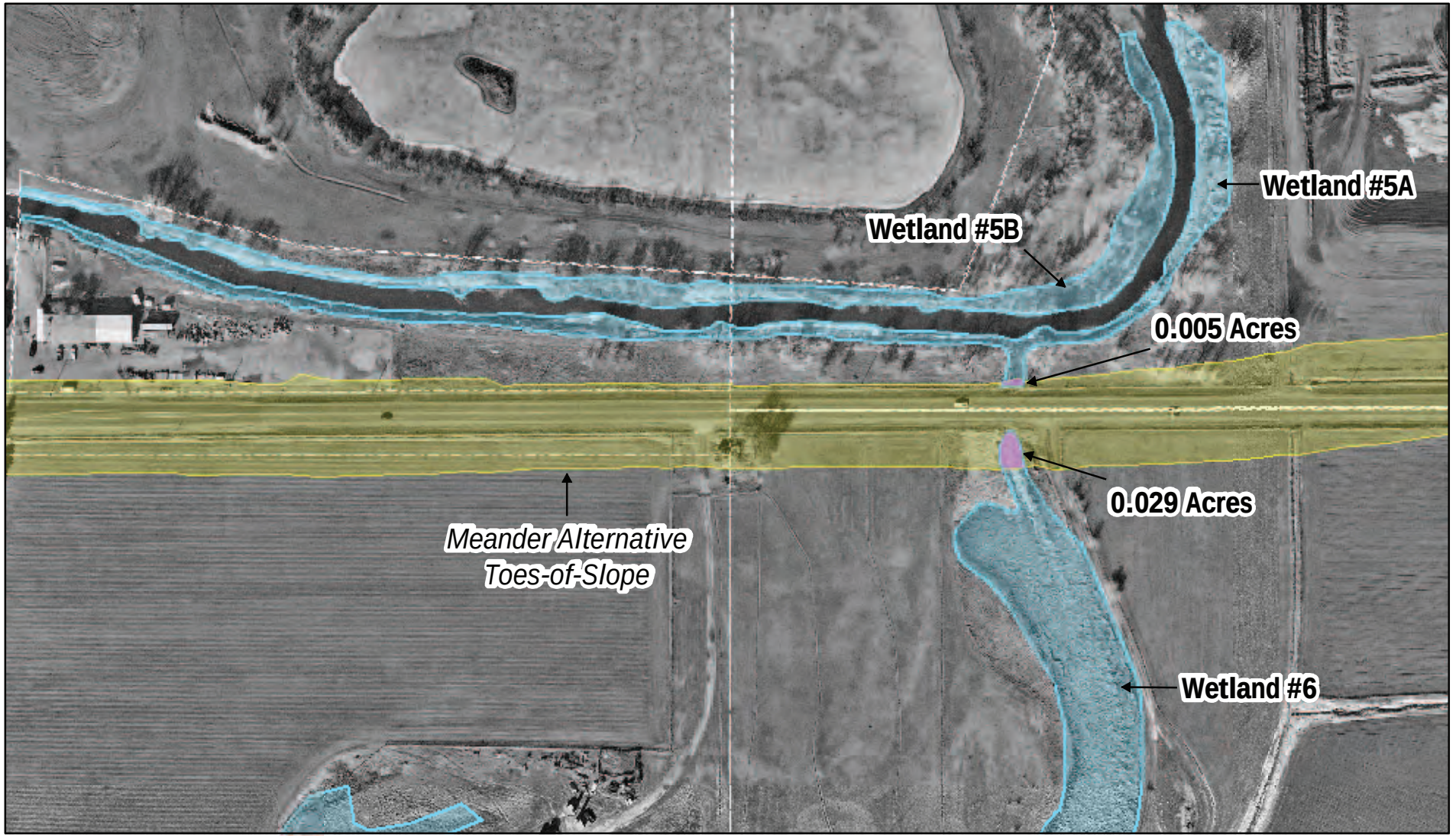
State Highway 402

Irrigation Ditch "A"

FIGURE B-4



LEGEND

- Wetland Boundary
- Wetland Impact
- Meander Alternative Toes-of-Slope Plus 5-Foot Addition

N
W E
S

SCALE - 1:2,400 or 1" = 200'

0 50 100 Meters

0 100 200 Feet

SOURCE: 2000 aerial photography provided by Airphoto USA / KRPS. Land use and parcel information provided by the City of Loveland. Wetland information obtained through field observation and aerial photo interpretation by JFSA. Map produced October 29, 2004 by JFSA.

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DOT Department of Transportation

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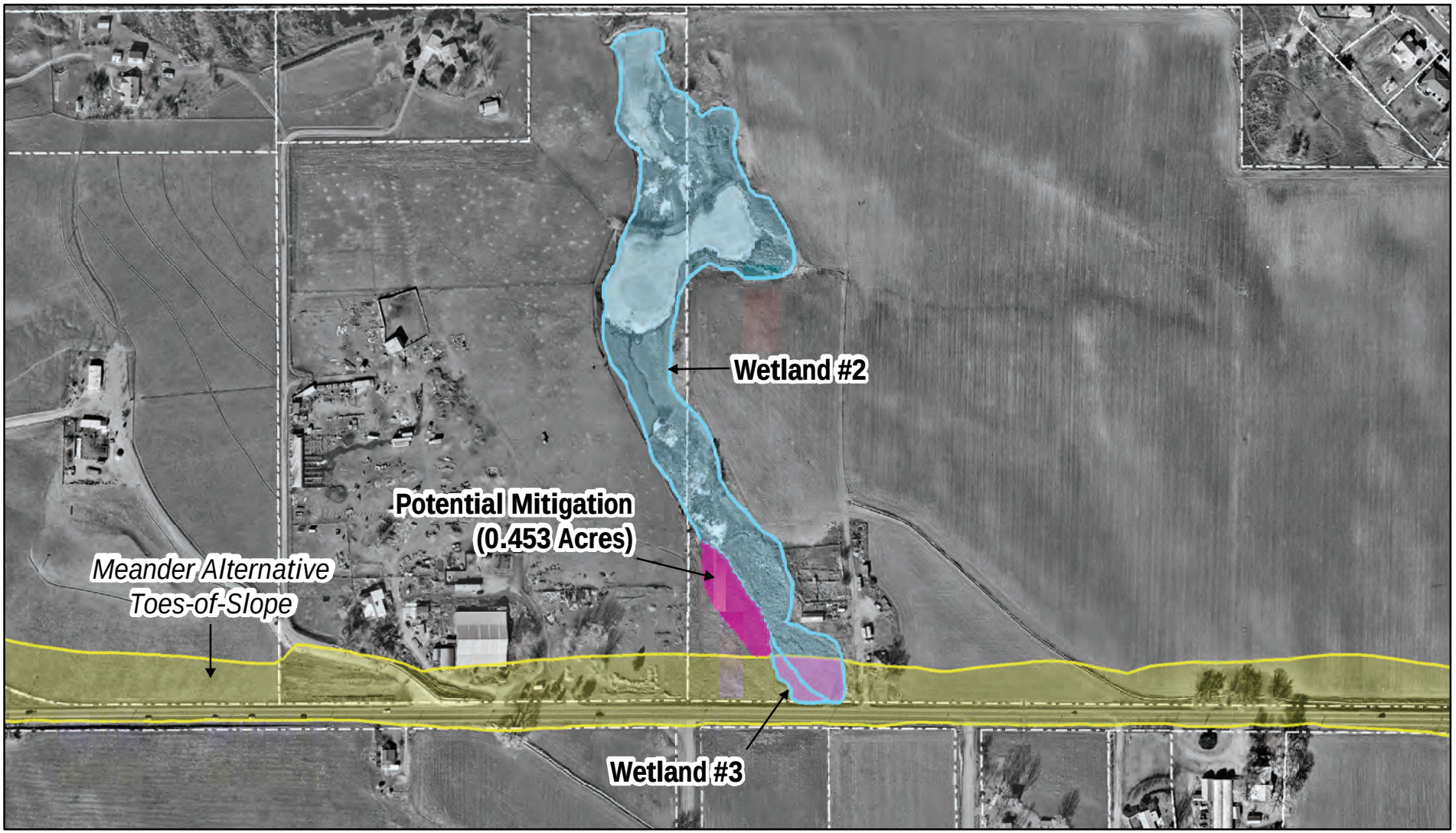
State Highway 402

Wetland Sites 5 and 6

FIGURE B-5



LEGEND

- Wetland Boundary
- Wetland Impact
- Potential Wetland Mitigation
- Meander Alternative Toes-of-Slope Plus 5-Foot Addition

N
W E
S

SCALE - 1:4,200 or 1" = 350'

0 100 200 Meters

0 250 500 Feet

SOURCE: 2000 aerial photography provided by Airphoto USA / KRPS. Land use and parcel information provided by the City of Loveland. Wetland information obtained through field observation and aerial photo interpretation by JFSA. Map produced October 29, 2004 by JFSA.

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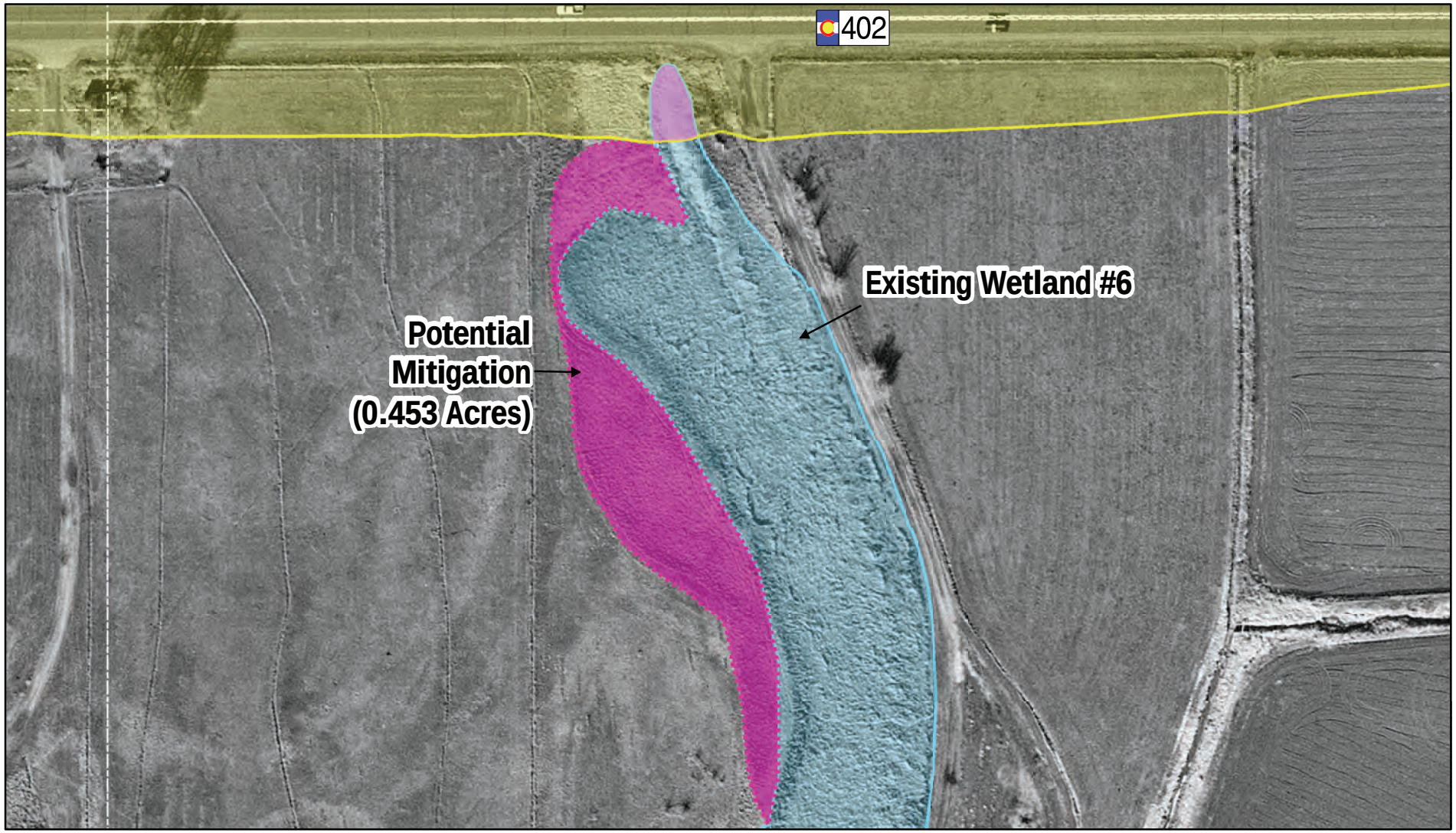
State Highway 402

Wetland Sites 2 and 3 Potential Mitigation Areas

FIGURE B-6



LEGEND

- Wetland Boundary
- Wetland Impacts
- Potential Wetland Mitigation Site
- Meander Alternative Toes-of-Slope

SCALE - 1:1,200 or 1" = 100'

0 50 100 Feet

0 25 50 Meters

SOURCE: 2000 aerial photography provided by Airphoto USA / KRPS. Land use and parcel information provided by the City of Loveland. Wetland information obtained through field observation and aerial photo interpretation by JFSA. Map produced August 1, 2003 by JFSA.

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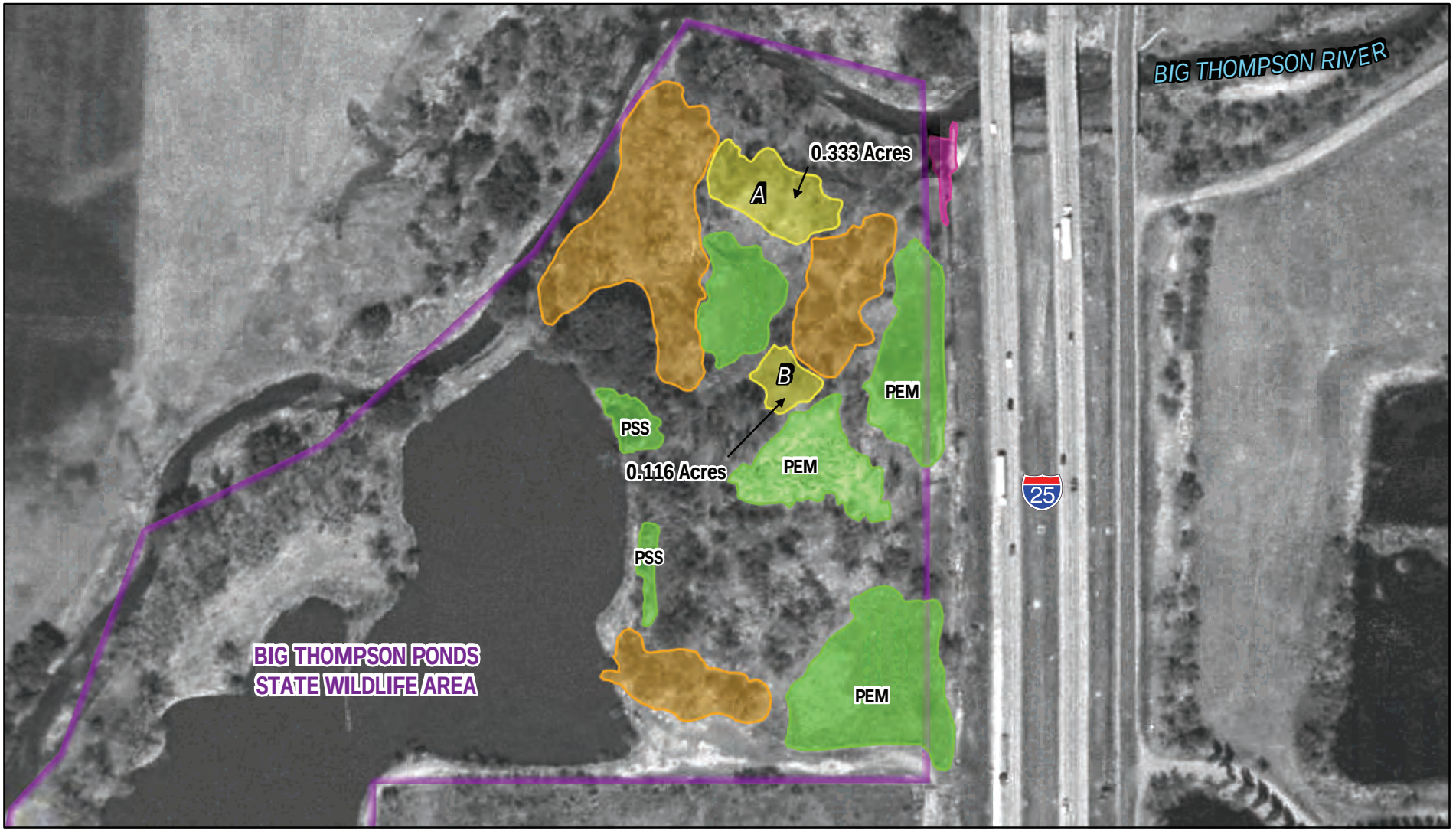
State Highway 402

Wetland Site 6 Potential Mitigation Area

FIGURE B-7



LEGEND

- Wetland Mitigation Sites
- Existing Wetlands (PSS = Palustrine Scrub Shrub, PEM = Palustrine Emergent)
- Noxious Weed Control Sites
- Riparian Habitat Enhancement

N W E S

SCALE - 1:2,400 or 1" = 200'

0 25 50 Meters

0 100 200 Feet

SOURCE: 2000 aerial photography provided by Airphoto USA / KRPS. Land use and parcel information provided by the City of Loveland. Wetland information obtained through field observation and aerial photo interpretation by JFSA. Map produced October 29, 2004 by JFSA.

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State Highway 402

Big Thompson Ponds

Potential Wetland Mitigation Sites

FIGURE B-8

Appendix B1. Field Data Sheets

Adjacent to Big Thompson River

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Site 5A - 5B North side SH402

Project/Site: CDOT Region 4
Applicant/Owner:
Investigator: Hettinger

Date: 8/24/01
County: Larimer
State: CO

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situation)? (Yes) No
Is the area a potential Problem Area? (Yes) No
(If needed, explain on reverse.) Note, Wetlands adjacent to Big Thompson R. = Channelized

Community ID:
Transect ID:
Plot ID: 5A-5B

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. *Reed Canary	H	FACW
2. Showy milkweed	H	FAC
3. Emoryi sedge	H	OBL
4. Curly DOCK	H	FACW
5. Peach-leaved willow	T	OBL
6. Sandbar willow	S	OBL
7. Vervain (2B)	H	FACW
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks: 3-5' of the lower banks of the river support wetlands - Note areas of concrete rubble etc

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:
Depth of Surface Water: 0 - 12 (in.)
Depth to Free Water in Pit: ____ (in.)
Depth to Saturated Soil: 0 - 12 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
X Saturated in Upper 12 Inches
___ Water Marks
X Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Edge of Active Channel

SOILS SH402 Site SA-5B

Map Unit Name (Series and Phase): Pasli Loam

Drainage Class: Saturated

Field Observations

Taxonomy (Subgroup): _____

Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- X Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors
- ___ Concretions
- X High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Saturated at surface or within 12"

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	
Is this Sampling Point Within a Wetland?	(Yes) No	(Circle)

Remarks: Area of river bank rip-rapped with concrete rubble - other discarded debris —

Approved by HQUSACE 2/92

Flow toward Big Thompson River - N, NE

SH402

#1 (Eaton Property)

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: STATE Highway 402 - E. Loveland
Applicant/Owner: CDOT - Region 4
Investigator: L. Hettinger

Date: 8/29/01
County: Larimer
State: CO

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situation)? (Yes) No
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.) Part of pasture

Community ID:
Transect ID:
Plot ID: #1

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Intermed. wheat	h	ND
2. Canada thistle	h	FACU
3. Curly dock	h	FACW
4. Bulrush (S. pallidus)	h	OBL
5. Redtop (A. gigantea)	h	FACW
6. Squirreltail	h	ND
7. Barnyardgrass (Echinochloa C-g)	h	FACW
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 4/7 = 57%

Remarks: FAC Neutral - Iocal

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observations:
Depth of Surface Water: — (in.)
Depth to Free Water in Pit: — (in.)
Depth to Saturated Soil: — (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
X Drainage Patterns in Wetlands Swale
Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: likely offsite water after storms - runoff

SOILS #1 - SH402

Map Unit Name (Series and Phase): Weld Silt - Loam

Drainage Class: Seasonal inund.

Taxonomy (Subgroup): —

Field Observations Confirm Mapped Type? Yes No /

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	A-B	7.5YR 5/4 brown			silty clay
4+	B	5 YR 3/1	V. dark gray		silty clay

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: FLUCTUATING W.T. indicated

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks: Note: Pasturage and some home-site development may have changed hydrology to (lessened) site but wetland characteristics remain.

Approved by HQUSACE 2/92

Flow To N and Big Thompson River

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Site 2 Olsen property

Project/Site: STATE Highway 402 - E. Loveland
Applicant/Owner: CDOT - Region 4
Investigator: Hettinger J.

Date: 10-25-01
County: Larimer
State: CO

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.) Note: Driveway and homesite (farmsted) on east side of site.

Community ID:
Transect ID:
Plot ID: 2

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Cattail (T. latifolia)	H	OBL	9.		
2. Showy milkweed	H	FAC	10.		
3. Willowherb (E. hornemanii)	H	FACW	11.		
4. Watercress (Nasturtium off)	H	OBL	12.		
5. Rabbitfoot grass (Polypogon)	H	OBL	13.		
6. Spikerush (Eleocharis)	H	OBL	14.		
7. Peachleaved willow	T-S	OBL	15.		
8. Russian olive	T-S	ND	16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 7/8 = 88%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)
Depth to Free Water in Pit: ~ 1" (in.)
Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:
Primary Indicators:
X Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
X Sediment Deposits
___ Drainage Patterns in Wetlands
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Saturated at surface.

SOILS

Site 2

Map Unit Name (Series and Phase): SANTANA LOAM

Drainage Class: SATURATED

Field Observations

Taxonomy (Subgroup): ~

Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	A0	10YR 2-4/1 (dk. gray)			Silty
4-12	B	10YR 4/1 (black)			Silty

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- ___ Aquic Moisture Regime
- X Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: MUCKY, SATURATED SOIL

WETLAND DETERMINATION

Hydrophytic Vegetation Present? (Yes) No (Circle)

Wetland Hydrology Present? (Yes) No

Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Circle) (Yes) No

Remarks: Appears as old meander channel; now has livestock pond nearby – functions as toxicant retention.

Approved by HQUSACE 2/92

Connected to Wetland #2, Flow toward Big Thompson River

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Site #3

Project/Site: STATE Highway 402 Applicant/Owner: CDOT, Region 4 Investigator: Hettinger	Date: 10/25/01 County: Larimer State: CO
Do Normal Circumstances exist on the site? Yes (No) Is the site significantly disturbed (Atypical Situation)? (Yes) No Is the area a potential Problem Area? Yes (No) (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: 3

VEGETATION

Some grazing has occured on this site (Cattail marsh), but is immediately adjacent to Site 2 on terrace grading to upland.

Dominant Plant Species	Stratum	Indicator
1. Giant wildrye (Leymus cinereus)	H	UPL
2. Rush (Juncus longistylis)	H	FACW
3. Baltic rush	H	FACW
4. Showy milkweed	H	FAC
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/4 = 75%

Remarks: Area grades into upland pasture of giant rye.
~40' of [illegible]

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: 2 (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- X Sediment Deposits Sandy deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Probably high water table in spring -

SOILS SH 402 Site # 3

Map Unit Name (Series and Phase): SANTANA LOAM

Drainage Class: Mod well - Imperf.

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-4	AB	7.5YR 4/3 Brown			Sandy Loam
4-12	B	7.5YR 4/3 Brwn	7.5YR 6/8 Reddish yellow	Constant	Sandy silt

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- ___ Reducing Conditions
- ___ Gleyed or Low-Chroma Colors mottles
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- X Other (Explain in Remarks)

Remarks: Scattering of mottles throughout > 1%

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	
Is this Sampling Point Within a Wetland?	(Yes) No	(Circle)

Remarks:

Approved by HQUSACE 2/92

Isolated Wetland - Seep

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Magpie Petroleum Pasture

Project/Site: SH 402 Site 4
Applicant/Owner: CDOT, Region 4
Investigator: Hettinger

Date: 10-25-01
County: Larimer
State: CO

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situation)? (Yes) No
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.) Alkali Flats & Seep - Pasture

Community ID:
Transect ID:
Plot ID: 4

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Saltgrass (Distichlis)	H	FACW
2. Baltic rush	H	FACW
3. Rush (Juncus longistylis)	H	FACW
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, (FACW) or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____ (in.)
Depth to Free Water in Pit: _____ (in.)
Depth to Saturated Soil: 6-12 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
X Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
X Sediment Deposits X Alkali deposits
X Drainage Patterns in Wetlands ditched
Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Lateral ditches across site to help drain it -

SOILS SH402 Site 4

Map Unit Name (Series and Phase): Carusso Clay Loam

Drainage Class: Poor Saturated

Field Observations Confirm Mapped Type? Yes No

Taxonomy (Subgroup):

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-1	A-B	7.5YR 3/1 (Black)			Silty Clay
1-10	B	7.5YR 3/1 to 3/2 (Black)			" "

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- ___ Sulfidic Odor
- ___ Aquic Moisture Regime
- X Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: Soil Moist - Saturated

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks: Typical salt-grass pasture w/ alkali

Approved by HQUSACE 2/92

Irrigation Ditch 'A' unnamed - drains toward by Thompson R.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: State Highway 402
Applicant/Owner: CDOT Region 4
Investigator: Hottmer, J

Date: 5-19-04
County: Larimer
State: CO

Do Normal Circumstances exist on the site? Yes (No)
Is the site significantly disturbed (Atypical Situation)? (Yes) No
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.) Irrigation Ditch

Community ID:
Transect ID:
Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator
1. Carex emoryi	H	FACW
2. Phalaris arundinacea (Reed canary)	H	FACW
3.		
4.		
5.		
6.		
7.		
8.		

Dominant Plant Species	Stratum	Indicator
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: Wetland ~ 3' at edge of flow channel on both banks

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: 1-2" (in.)

Depth to Free Water in Pit: _____ (in.)

Depth to Saturated Soil: _____ (in.)

Wetland Hydrology Indicators:

Primary Indicators:
- X Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: Flowing ditch

SOILS

Map Unit Name (Series and Phase): Pasli Loam

Drainage Class: Saturated

Field Observations

Taxonomy (Subgroup): _____

Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-2	O	Organic			
2-15	A-B	7.5 2.5/1 YR BLACK		—	Silty
		- 5YR 2.5/1 YR BLACK			

Hydric Soil Indicators:

- ___ Histosol
- ___ Histic Epipedon
- X Sulfidic Odor
- X Aquic Moisture Regime
- ___ Reducing Conditions
- X Gleyed or Low-Chroma Colors
- ___ Concretions
- ___ High Organic Content in Surface Layer in Sandy Soils
- ___ Organic Streaking in Sandy Soils
- ___ Listed on Local Hydric Soils List
- ___ Listed on National Hydric Soils List
- ___ Other (Explain in Remarks)

Remarks: BLACK MUCKY Soil at 2" w/ free water in profile

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	(Yes) No	(Circle)
Wetland Hydrology Present?	(Yes) No	
Hydric Soils Present?	(Yes) No	

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks:

Approved by HQUSACE 2/92

Appendix B2. USCOE Letter of Concurrence

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
DENVER REGULATORY OFFICE, 9307 SOUTH WADSWORTH BOULEVARD
LITTLETON, COLORADO 80128-6901

June 1, 2004

Mr. Loren Hettinger
JF Sato and Associates
5898 So. Rapp St.
Littleton, CO 80120

RE: Preliminary and Approved Jurisdictional Determination, Jurisdictional Areas: Wetland 2, 3, 5A, 5B and 6 and Irrigation Ditch A; Non-jurisdictional Areas: Wetland 4 and Dried up Wetland Area 1
Corps File No. 200480260

Dear Mr. Hettinger:

I have reviewed this project located in Sections 20, 21, 24, 25 and 30, T5N, R68W, Larimer County, Colorado on behalf of Colorado Department of Transportation. This review was in accordance with Section 404 of the Clean Water Act under which the U.S. Army Corps of Engineers regulates the discharge of dredged and fill material, and any excavation activities associated with a dredged and fill project, into waters of the United States. Waters of the United States include ephemeral, intermittent and perennial streams, their surface connected wetlands and adjacent wetlands and certain lakes, ponds, irrigation and drainage ditches that have a nexus to interstate commerce. Under the authority of the Clean Water Act, a preliminary jurisdictional determination has determined that wetland 2, 3, 5A, 5B and 6 and irrigation ditch A may be waters of the U.S.

If a proposed activity requires work within the above-described waters of the U.S., a proponent of the project should notify this office for Department of the Army permits. This jurisdictional delineation is valid for a period of five years from the date of this letter unless new information warrants revision of the determination before the expiration date.

Based upon the ruling by the Supreme Court in the matter of Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers, No. 99-1178 (January 9, 2001), the Department of the Army's (DA) regulatory authority over isolated, non-navigable, intrastate waters has been eliminated **if** the sole nexus to interstate commerce was use of the waters by migratory birds. It is apparent under the ruling above that the DA does not have the authority to regulate work in isolated wetland 4. This wetland is not waters of the U.S. and therefore non-jurisdictional. No permit or other authorization by the DA is required for work in this wetland. This jurisdictional determination is valid for a period of five years from the date of this letter unless new information warrants revision of the determination before the expiration date.

The attached **Jurisdictional Determination** form provides the basis jurisdiction for isolated wetland 4. If the applicant wishes to appeal this approved jurisdictional determination, the attached **Notification of Administrative Appeal Options** form should be completed and sent to Mr. Mores Bergman at the address noted on the form. This jurisdictional determination is valid for a period of five years from the date of this letter unless new information warrants revision of the determination before the expiration date.

Although a DA permit will not be required for work in isolated wetland 4, this does not eliminate the requirement that you obtain any other applicable Federal, state, tribal or local permits as required. Also, wetland area 1 is not a wetland.

Our office considers your wetlands delineation report and map for this project accurate and acceptable. If you have any questions call me at **(303) 979-4120** and reference **Corps File No. 200480260**.

Sincerely,

Terry McKee

Terry McKee
Natural Resource Specialist

tm

JURISDICTIONAL DETERMINATION Revised 7/9/03
U.S. Army Corps of Engineers, (District)

APPLICANT: CDOT

PROJECT LOCATION/WATERWAY: Larimer Co / jurisdictional areas: wetlands 2, 3, 5A, 5B, 6 and irrigation ditch A; non-jurisdiction areas: dried up wetland 1 and isolated wetland 4

FILE NUMBER: 200480260

PROJECT REVIEW COMPLETED: [x] Office and [x] Field

Jurisdictional Determination (JD): (For sites regulated under 33 CFR 320-330)

[x] Preliminary JD - Based on available information, [x] **(jurisdictional areas)** there appear to be or [ ] there appear to be no "waters of the United States" or "navigable waters of the United States" on the project site. A preliminary JD is not appealable.

[x] Approved JD – [ ] there are or [x] **(non-jurisdictional areas)** there are no "waters of the United States" or "navigable waters of the United States" on the project site. An approved JD is an appealable action (Reference 33 CFR 331).
(Note: JDs prepared by the Environmental Protection Agency are not appealable to the Corps of Engineers)

Basis of Jurisdictional Determination:

Waters defined under 33CFR 328.3(a) as "waters of the United States":

[ ] (1) The presence of waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.
[x] (2) The presence of interstate waters of including interstate wetlands *1.
[ ] (3) The presence of other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could effect interstate commerce including any such waters:
  [ ] (i) which are or could be used by interstate or foreign travelers for recreational or other purposes.
  [ ] (ii) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
  [ ] (iii) which are or could be used for industrial purposes by industries in interstate commerce.
[ ] (4) Impoundments of waters defined as a Water of the US.
[x] (5) The presence of a tributary to a water identified in (1) – (4) above.
[ ] (6) The presence of territorial seas.
[ ] (7) The presence of wetlands adjacent*2 to interstate or other waters of the US, except for those wetlands adjacent to other wetlands.

Waters defined under 33CFR 329 as "navigable waters of the United States":

[ ] The presence of waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Rationale for Basis: Wetlands 2, 3 and 6 and irrigation ditch A (intercepts a wetland drainage to the SW of this site) flows to the Big Thompson River that flows to the South Platte River, which is an interstate waters. Wetlands 5A and 5B are connected to the Big Thompson River. Wetland 4 is neither adjacent to nor surface connected to and interstate waters. Wetland area 1 is dried up and is dominated with upland grasses.

Lateral Extent of Jurisdiction: (Reference: 33 CFR 328 and 329)

[x] Ordinary High Water Mark of irrigation ditch A indicated by:
  [x] clear, natural line impressed on the bank
  [ ] the presence of litter and debris
  [ ] changes in the character of soil
  [x] destruction of terrestrial vegetation
  [ ] shelving
  [ ] other: streambed

☐ High Tide Line indicated by:
☐ oil or scum line along shore objects
☐ fine shell or debris deposits (foreshore)
☐ physical markings/characteristics
☐ tidal gages
☐ other: _____

[ ] Mean High Water Mark indicated by:
  [ ] survey to available datum; [ ] physical markings; [ ] vegetation lines/changes in vegetation types
☐ In ocean or coastal area, site is within a zone three geographic (nautical) miles seaward of the baseline*3

[x] Wetland, as shown on the attached wetland delineation map and/or in a jurisdictional report prepared by: JF Sato and associates

[ ] Additional supporting information attached:

Preparer: Terry McKee Date: June 1, 2004

[1]Wetlands are identified and delineated using the methods and criteria established in the Corps Wetland Delineation Manual (87 Manual) (i.e., occurrence of hydrophytic vegetation, hydric soils and wetland hydrology).
[2]The term "adjacent" means bordering, contiguous, or neighboring. Wetlands separated from other waters of the U.S. by man-made dikes or barriers, natural river berms, beach dunes, and the like are also adjacent.
[3]Baseline is the line on the shore reached by the ordinary low tides from which the distance of three miles is measured.

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: CDOT	File Number: 200480260	Date: June 1 04
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an appro JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

Timothy T. Carey
Chief, Denver Regulatory Office
9307 South Wadsworth Boulevard
Littleton, CO 80128
(303) 979-4120

If you only have questions regarding the appeal process you may also contact:

US Army Corps of Engineers
Northwestern Division
Attn: Mores Bergman, Appeal Officer
12565 West Center Road
Omaha, Nebraska 68144-3869
Telephone (402) 697-2533

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Appendix B3. Mitigation Site Selection Form

Wetland Mitigation Site Selection Form
Colorado Department of Transportation

Attachment to Wetland Finding
For PEM (Marsh) Site Along SH 402

Project Name/No. SH 402 I-25 to US 287 | Subaccount STA 402A-003 | Region 4
Author Loren Hettinger | Firm J.F. Sato & Associates | Date January 21, 2005

Mitigation Options Available	(1) Mitigation bank available? No
	(2) Project impacts in 1°, 2° service area? No
	(3) HUC units N/A
	(4) On-site mitigation available? Yes, in conjunction with cattail marsh expansion along SH 402
	(5) Off-site mitigation available? Yes, wetland development, riparian habitat enhancement, and weed control, Big Thompson State Wildlife Area
	(6) In-lieu fee arrangement available? No In-lieu fee sponsor
	(7) Mitigation ratio(s) other than 1:1 involved? No Ratio(s)

		Impact Site	**Mitigation Site**
Site Characteristics	(8) Geographic location	Sec. 24,25; T5N, R69W: Sections 19, 20, 21, 22, 27, 28, 29, 30; T5N, R68W	PEM cattail marsh; e.g., NW ¼ Sec 30, and SW ¼ Sec 21; T5N, R68W
	(9) Wetland community type, pct	PFO/PEM (5%) and PEM (95%)	PEM (100%)
	(10) Functions, values	Groundwater recharge, sediment toxicant retention, and wildlife habitat, bank stability	Similar functions/values, except bank stability
	(11) Size of impacts, pct. of total area?	< 1 % of total	N/A

Wildlife/Habitat	(12) T&E species/habitat present?	No	No
	(13) Species? Status?	NA	NA
	(14) Migratory Bird Treaty Act?	Nesting habitat throughout PFO along Big Thompson River wetlands	Nesting in cattail marsh (e.g., red-winged black bird)
	(15) Other wildlife issues?	Other species of the area include raccoon, fox, coyote, white-tailed deer, and various bird species.	Racoon, red-winged black bird, striped skunk
	(16) Status of aquatic resource?	None designated	None designated
	(17) Special aquatic site?	None designated	None designated
	(18) Unique? Quality? Ranking?	Mostly PEM marsh and meadow wetlands that provide flood control/storage and water quality improvement functions. A small amount of PFO (riparian) wetland would be affected, which provides bank stability, as well as a wildlife habitat function.	PEM marsh wetland to provide flood storage and water quality improvement functions.
	(19) Watershed, ecosystem issues?	The watershed has been affected by agricultural development that occurs adjacent to all of the wetlands.	Historical impacts to the mitigation sites are similar to the impact areas.

Other	(20) Likelihood of success?	N/A	The hydrology of the mitigation site will be determined for 2 years prior to construction using wells (PVC pipe) to observe groundwater levels.
	(21) Interagency agreement?	N/A	No other agencies are involved at this mitigation site.
	(22) Project logistics, size/scope?	N/A	While the wetland impacts occur at several locations along SH 402, PEM wetlands are the predominate type. Mitigation objectives are to replace this type.
	(23) Cost considerations?	N/A	Costs will include land purchase outside the ROW, design plan development, excavation, soil preparation, plant material acquisition and planting, and monitoring work to establish a PEM (sedge, rush) wetland.
	(24) Buffer used?	N/A	No

Water Issues	(25) Individual 404 permit condition?	The area required for mitigation is less than the 0.5-acre threshold requiring an Individual 404 permit.
	(26) 404(b)(1) Guidelines?	The guidelines will need to be addressed as part of the mitigation plan design, and must include measures to protect water quality from being degraded during mitigation work, including increased sediment loading.
	(27) NWP gen., reg. conditions?	NWP 27 applies to stream and wetland restoration, and this or other NWPs would be required for the mitigation work at this site.
	(28) Regulatory letters?	COE *Guidance for Wetland and Stream Mitigation and Mitigation Banking in the Omaha District* (2003)
	(29) S.B. 40?	The mitigation measures would not invoke SB 40 criteria.
	(30) Water rights issues?	No additional water would be used that would cause a water rights issue.

NEPA Issues	(31) Cumulative impact issues?	Cumulative impacts were analyzed as part of the EA for the SH 402 project. As the area develops, and more residential and commercial sites are built, wetland areas along SH 402 will likely be affected by increased runoff and recreational use. These increases may affect water quality and habitat usage
	(32) Agency policy, input?	Public meetings part of Environmental Assessment and Public Involvement Program. The impacts and the proposed mitigation have been correlated with the COE.
	(33) Public involvement?	Public involvement occurred throughout the EA process and included discussions of wetland impacts.

(34) **Basis for Decision**

[Describe those factors from the front side that are instrumental in the selection of the chosen mitigation decision.]

The decision to mitigate wetland impacts at this site is based on the concept of expanding an existing wetland site where there is a known water table that supports a marsh.

(35) **Decision**

Based on the parameters mentioned in item 34, this on-site area was selected to mitigate part of the impacts that were predicted from the SH 402 improvement project.

(36) **Contingency Plans**

Other sites that could be considered for mitigation opportunities include the Simpson Ponds SWA, which are north of SH 402 along the Big Thompson River, and the St. Vrain Pond (Barbour Ponds) SWA on the Saint Vrain River approximately 14 miles south of the project area. Comprehensive plans, similar to those developed for the Thompson Pond SWA, that consist of wetland development (expansion), riparian habitat enhancement and weed control are appropriate for both sites.

Wetland Mitigation Site Selection Form
Colorado Department of Transportation

Attachment to Wetland Finding
For Thompson Ponds SWA Site

Project Name/No.	SH 402 I-25 to US 287	Subaccount	STA 402A-003	Region	4
Author	Loren Hettinger	Firm	J.F. Sato & Associates	Date	January 21, 2005

Mitigation Options Available	
	(1) Mitigation bank available? Yes/No
	(2) Project impacts in 1^o, 2^o service area?
	(3) HUC units
	(4) On-site mitigation available? Yes, PEM Cattail Marsh Expansion
	(5) Off-site mitigation available? Yes , SWA Mitigation Site
	(6) In-lieu fee arrangement available? No In-lieu fee sponsor N/A
	(7) Mitigation ratio(s) other than 1:1 involved? No Ratio(s)

		Impact Site	**Mitigation Site**
Site Characteristics	(8) Geographic location	Sec. 24,25; T5N, R69W: Sections 19, 20, 21, 22, 27, 28, 29, 30; T5N, R68W	NE ¼ Sec 21, NW ¼ Sec 22, R68W, T5N
	(9) Wetland community type, pct	PFO/EM (5%) and PEM (95%	PSS/EM, PEM
	(10) Functions, values	Groundwater recharge, sediment toxicant retention, and wildlife habitat, bank stability and flood flow alteration	Increased functional values for wildlife habitat, flood flow alteration and recreation
	(11) Size of impacts, pct. of total area?	< 1 % of total	N/A

Wildlife/Habitat	(12) T&E species/habitat present	Yes/No	No
	(13) Species? Status?	N/A	N/A
	(14) Migratory Bird Treaty Act?	Nesting habitat throughout PFO along Big Thompson River wetlands	Nesting habitat for numerous bird species occurs at this site.
	(15) Other wildlife issues?	Other species of the area include raccoon, fox, coyote, white-tailed deer, and various bird species.	Species of the area include white-tailed deer, coyote, red fox, raccoon, striped skunk, beaver, red-tailed hawk, northern harrier, American kestrel, killdeer, red-winged black bird, and numerous waterfowl, wading and songbird species.
	(16) Status of aquatic resource?	None designated	This site is within a State Wildlife Area that is established to provide habitat for aquatic and upland species.
	(17) Special aquatic site?	None designated	SWA; pond and riverine system
	(18) Unique? Quality? Ranking?	Mostly PEM marsh and meadow wetlands that provide flood control/storage and water quality improvement functions. A small amount of PFO (riparian) wetland would be affected, which provides bank stability, as well as a wildlife habitat function.	The site is composed of ponds surrounded by riparian and marsh habitats that extend to the Big Thompson River. This area provides diverse aquatic and wildlife habitat, flood flow storage-alteration, ground water recharge, and discharge, sediment stabilization, production export, and is valuable for recreation.
	(19) Watershed, ecosystem issues?	The watershed has been affected by agricultural development that occurs adjacent to all of the wetlands.	The SWA originated as gravel mines which exposed the shallow water table. Although a valuable aquatic and wetland system, the area contains patches of weeds, and Russian olive dominates the riparian areas surrounding the ponds.

Other	(20) Likelihood of success?	N/A	Probability of success is rated as high because of the shallow ground water table, and the opportunities to remove weedy species from wetlands, and riparian habitats.
	(21) Interagency agreement?	N/A	Agreement will be needed between CDOT and CDOW.
	(22) Project logistics, size/scope?	N/A	The SH 402 project occurs over a 6-mile distance, and may affect wetlands that are scattered along this corridor at different times during the construction period. This mitigation site, however, is off site, and construction could occur at any time.
	(23) Cost considerations?	N/A	This site is owned by the State, but costs for the mitigation will consist of earthwork, weedy species removal and control, and for plant material and installation. Costs will also be incurred to monitor the mitigation.
	(24) Buffer used?	N/A	No

Water Issues	(25) Individual 404 permit condition?	The area required for mitigation is less than the 0.5-acre threshold requiring an Individual 404 permit.
	(26) 404(b)(1) Guidelines?	The guidelines will need to be addressed as part of the mitigation plan design, and must include measures to protect water quality from being degraded during mitigation work, including increased sediment loading.
	(27) NWP gen., reg. conditions?	NWP 27 applies to stream and wetland restoration, and this or other NWPs would be required for the mitigation work at this site.
	(28) Regulatory letters?	COE *Guidance for Wetland and Stream Mitigation and Mitigation Banking in the Omaha District* (2003).
	(29) S.B. 40?	The mitigation measures would not invoke SB 40 criteria.
	(30) Water rights issues?	No additional usage of water would occur from the mitigation measures that are planned for the ponds. Willows would replace Russian olive trees, and no major change in evapo-transpiration rates are anticipated.

NEPA Issues	(31) Cumulative impact issues?	Cumulative impacts were analyzed as part of the EA for the SH 402 project. As the area develops, and more residential and commercial sites are built, the SWA will be affected by increased runoff and recreational use. These increases may affect water quality and habitat usage.
	(32) Agency policy, input?	The impacts and the proposed mitigation have been correlated with the COE. The mitigation at this site has been coordinated with the CDOW.
	(33) Public involvement?	Public involvement occurred throughout the EA process, and included discussions of wetland impacts.

(34) **Basis for Decision**

[Describe those factors from the front side that are instrumental in the selection of the chosen mitigation decision.]

The decision to mitigate wetland impacts is based on multiple factors. These include the opportunity to enhance the wetland and riparian habitats in conjunction with CDOW needs for the site. The site ownership is secured under the CDOW, which reduces property acquisition costs.

(35) **Decision**

Based on the parameters mentioned in item 34, this offsite area was selected to mitigate part of the impacts that were predicted from the SH 402 improvement project.

(36) **Contingency Plans**

Other sites that could be considered for mitigation opportunities include the Simpson Ponds SWA, which are north of SH 402 along the Big Thompson River, and the St. Vrain Pond (Barbour Ponds) SWA on the Saint Vrain River approximately 14 miles south of the project area. Comprehensive plans, similar to those developed for the Thompson Pond SWA, that consist of wetland development (expansion), riparian habitat enhancement and weed control are appropriate for both sites.

Appendix C

Public Involvement Program

Appendix C. Public Involvement Program

The purposes of the Public Involvement Program (PIP) are to inform the public of the project, obtain input from the public on their concerns and issues, and allow for feedback during the Environmental Assessment process. The SH 402 PIP consisted of agency and public meetings and workshops, as well as the development of factsheets and a mailing list to systematically distribute information to the public and appropriate state, local, and federal agencies. This is a continuing process.

The status of an earlier proposed Categorical Exclusion (CE) is found on page C-2 of this appendix.

Below is a chronology of activities and mailings for the SH 402 project. Copies of the public workshop handouts, the seven project factsheets, and a stakeholder mailing are located in the remainder of the appendix.

Activity	Date
Agency Status Meetings	
#1	October 17, 2001
#2	August 22, 2002
#3	February 12, 2003
Public Workshops	
#1	September 19, 2002
#2	April 15, 2003
Project Factsheets	
#1	October 2001
#2	November 2002
#3	April 2003
#4	July 2003
#5	April 2004
Stakeholder Mailing	April 2004
#6	January 2005
#7	September 2005

Status of Categorical Exclusion (CE)

The half-mile portion of the corridor immediately east of US 287 had been of particular interest to the Colorado Department of Transportation (CDOT) and the city of Loveland due to safety, access, and right-of-way concerns associated with planned urban development. Earlier in SH 402 project development, a categorical exclusion was proposed for the portion of the highway between US 287 and CR 13C (St. Louis Avenue) due to a city of Loveland planned residential development (Waterford Place Apartments). This residential development was approved and has been constructed with proper allowance for future highway right-of-way under a CE dated September 18, 2003.

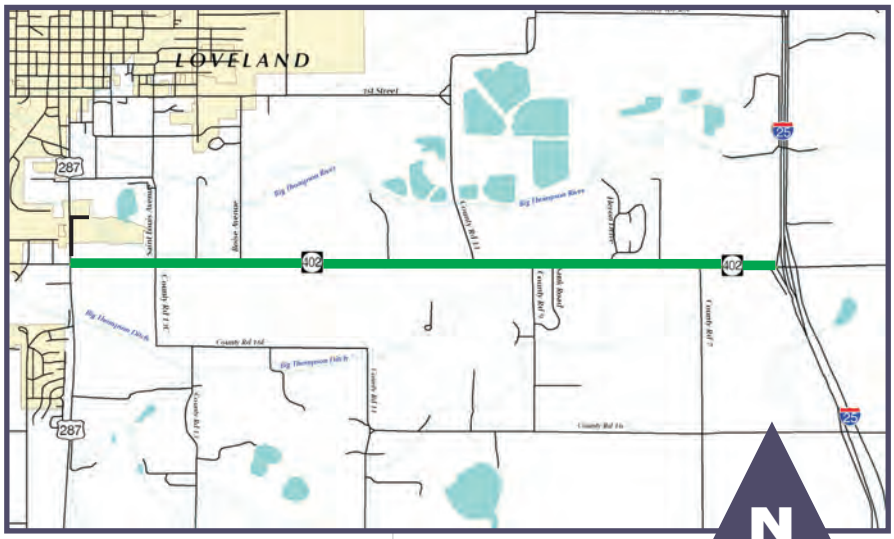
Welcome

Please sign the attendance roster.

Read the handout.

Visit our displays

If you have any questions, please ask one of our CDOT representatives or consultants.



Study**AREA**

- Water Bodies
- Project Area
- Loveland Municipal Boundary
- Roads
- Streams & Rivers

If you wish to make a written statement or comment, please fill out the form in the back of this handout. You may also contact our website: www.sh402ea.com to review the project newsletter or e-mail comments.

CDOT

SH 402

State Highway 402 from US 287 East to the I-25 Interchange

Project **BACKGROUND**

The Federal Highway Administration (FHWA), as the lead agency, and the Colorado Department of Transportation, Region 4 (CDOT) have initiated an Environmental Assessment (EA) to evaluate potential improvements along SH 402 from US 287 east to the I-25 Interchange. As the lead federal agency, FHWA has the authority and responsibility to make the final decisions. CDOT is the applicant and is responsible for the preparation of the EA.

Planning and construction of improvements along the approximately 4-mile stretch of SH 402 have been ranked 10th in the North Front Range (NFR) 2020 Regional Transportation Plan, and the project is currently in the State-wide Transportation Improvement Plan for highway improvements. The EA will identify alternatives to improve mobility and safety, which will include the No Action alternative. Maintaining or improving access to the residences, businesses, and the park-n-Ride within the study area will also be evaluated. CDOT will examine alternatives for the ability to meet these goals now and in 20 years.

EA **PROCESS**

(please refer to graphic on the back of this page)

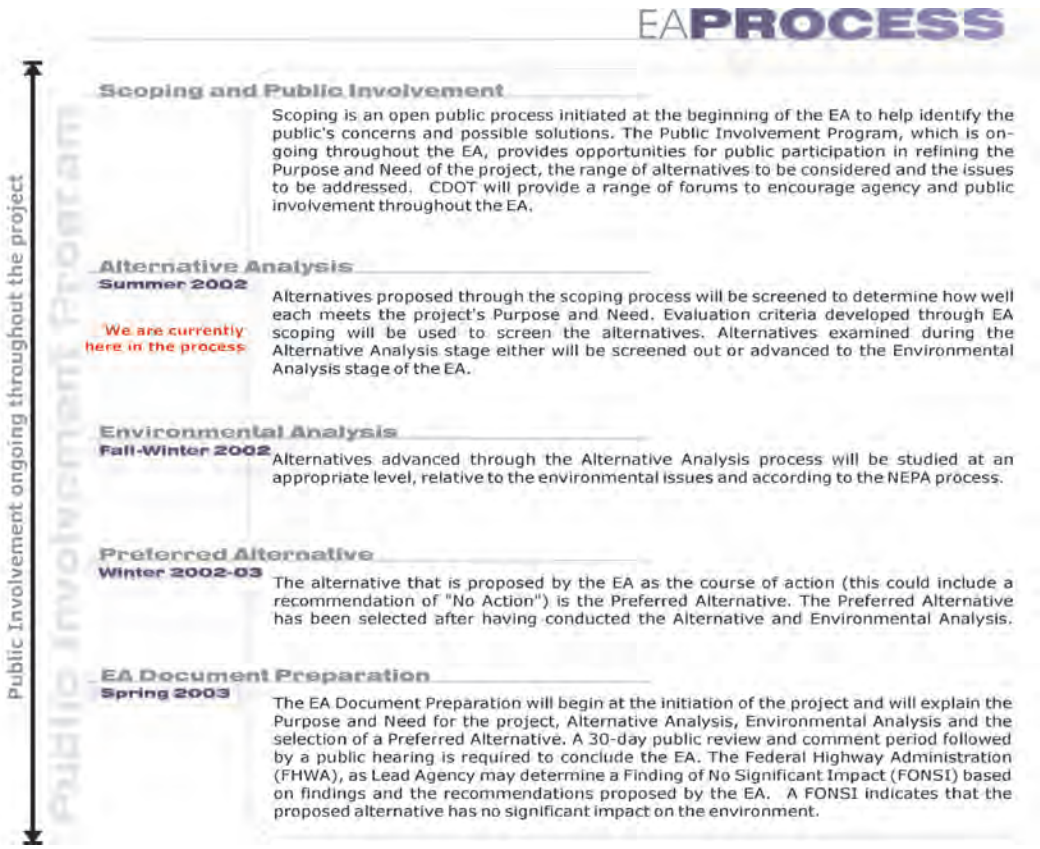
CDOT is currently in the Alternatives Analysis phase of the project. Public Involvement, however, is ongoing throughout the process to keep interested individuals, groups, and agencies informed about the project and to solicit input at key milestones in the project.

Proposed **ACTION**

The proposed action under study is to evaluate potential improvements along SH 402 from US 287 east to the I-25 Interchange that improve safety and increase capacity. The EA process will evaluate various alternatives, and the No Action alternative, to determine a preferred alternative. The preferred alternative will meet the purpose and need of the project, to improve safety and increase capacity, while:

- **Considering compatibility with local and state plans**
- **Providing on-going coordination with federal, state and county agencies**
- **Protecting or maintaining community values and the environment**
- **Minimizing utility, traffic, and access impacts during construction if an action alternative is the preferred alternative**

The EA will be conducted in compliance with the National Environmental Policy Act (NEPA) and will encourage public involvement throughout the process. CDOT is committed to maintaining the environmental integrity, both natural and human, of the study area.



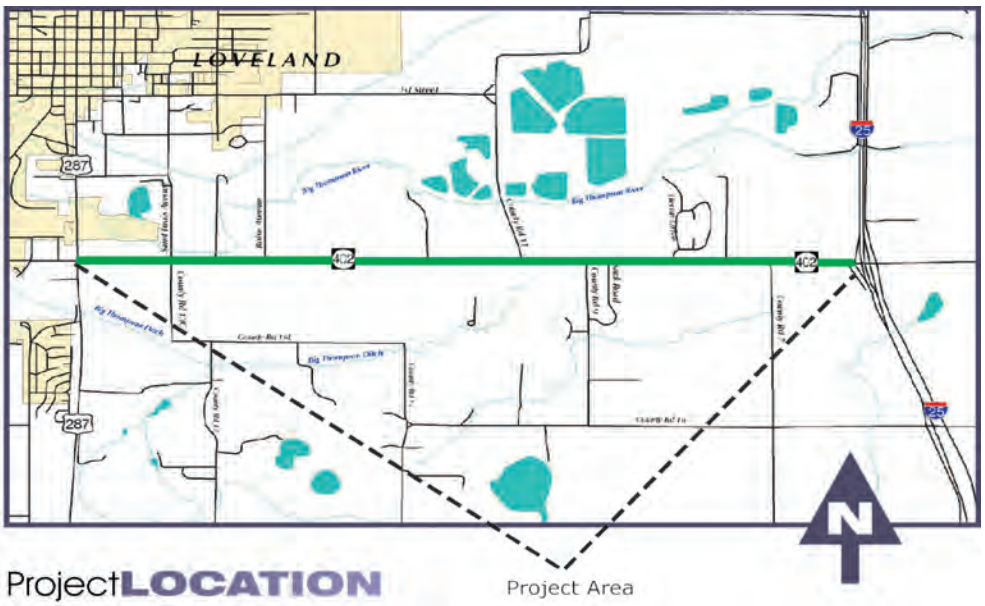
Opportunities for **Public Involvement**

Please feel free to contact;Jeff Manuel, Environmental Unit Manager, (CDOT Region 4) or Michelle Li, Project Manager, (JFSA) with any additional questions or comments you may have regarding this project, or to be added to the mailing list.

Jeff's mailing address is 1420 2nd Street, Greeley, CO 80631, his e-mail is jeff.manuel@dot.state.co.us, and his phone number is (970) 350-2170.

Michelle's mailing address is 5898 S. Rapp Street, Littleton, CO 80120, her e-mail is mli@jfsato.com, and her phone number is (303) 797-1200.

You can also visit the project Web site at www.sh402ea.com.



Project Overview

- The general plan for SH 402 from US 287 east to the I-25 interchange is to **widen from two to four lanes** thereby providing a **higher level of service** and improving **safety** along this stretch of roadway.
- The project is **ranked 10th in the North Front Range 2020 Regional Transportation Plan** and currently is in the Statewide Transportation Improvement Plan.
- The **City of Loveland 2020 Transportation Plan** shows SH 402 as a four lane facility.

CDOT SH 402 Environmental Assessment

Glossary of Terms

Alternative Analysis – process by which alternatives identified through the scoping process will be screened to determine how well each meets the Purpose and Need as well as criteria related to key issues and concerns associated with the study area.

Average Daily Traffic (ADT) – average two-way traffic, in number of vehicles.

Capacity – maximum rate of flow at which vehicles can traverse a point on one lane of roadway during one hour.

CDOT – Colorado Department of Transportation

Design Hourly Volume – peak hour traffic (rush hour) whether in the morning or afternoon hour.

EA - an Environmental Assessment is a written statement prepared in accordance with NEPA when the level of potential impacts is not clear. The document discloses the effects on the environment that could result from a proposed action (planning or decision making).

FHWA – Federal Highway Administration

FONSI – Finding of No Significant Impact; possible final decision on an EA indicating that the preferred alternative has no significant impacts on the environment that cannot be appropriately mitigated.

LOS – Level of Service is a qualitative measure describing the operational characteristics within a traffic stream, generally described in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety.

LOS A – free flow operations
LOS B – reasonably free-flow operations
LOS C – noticeable traffic
LOS D – speeds decline and congestion begins to form
LOS E – maximum service flow (full capacity)
LOS F – heavy congestion, significant delays, stop-and-go-traffic

Mobility – the ability of traffic to move unimpeded through a highway or roadway corridor.

NEPA – National Environmental Policy Act of 1969 is our nation's basic charter for protection of the environment. It establishes policy, sets goals, and provides

the means for carrying out the policy. In accordance with NEPA, all federal agencies must prepare a written statement on the environmental impacts of a proposed action. The provisions to ensure that federal agencies act according to the letter and spirit of NEPA are in the Council on Environmental Quality (CEQ) regulations for implementing NEPA (43 CFR 1500-1508).

No Action Alternative – alternative that represents projected conditions within the study area without the implementation of improvement and that serves as a baseline for the comparison of the build alternatives.

Preferred Alternative – alternative identified through the EA process that is the action recommended to meet the Purpose and Need of the project.

Prime Farmland – soil units that have the best combination of physical and chemical characteristics for producing feed, food, forage, fiber and oilseed crops as identified in accordance with the Farmland Protection Policy Act of 1981.

Purpose and Need – the underlying reason for conducting the studies and analysis; the purpose and need to which the agency is responding by proposing alternative solutions.

Right of Way – a general term denoting land, property, or interest therein, usually in a strip acquired for or devoted to transportation purposes.

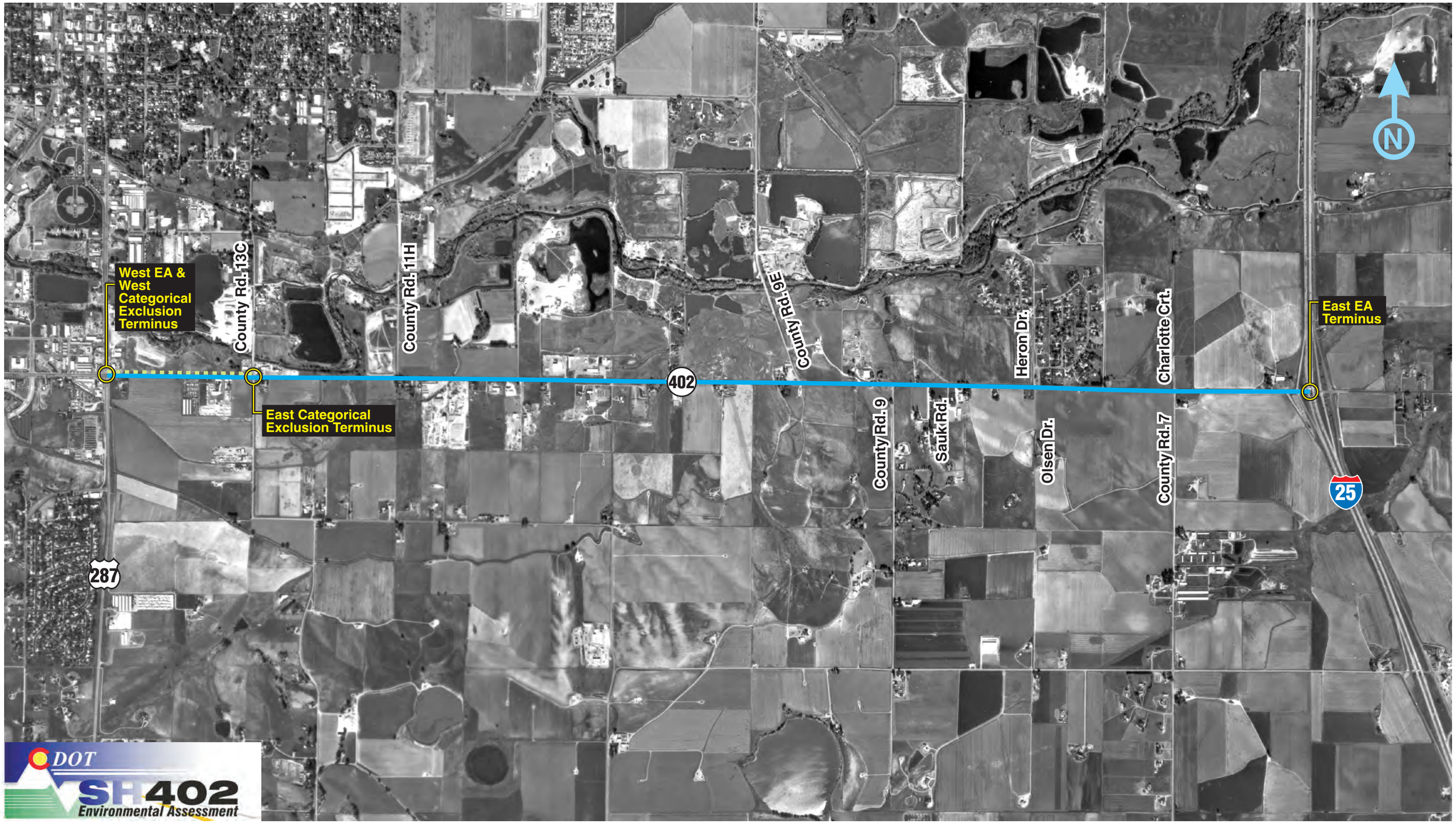
Scoping – an open public process initiated at the beginning of the EA to help identify the public's concerns and recommended solutions.

Screening (alternatives analysis) – A systematic process through which a broad range of alternatives is narrowed down to those that best meet the goals of the project based on the purpose and need of the project and key issues and concerns related to the study area. Alternative(s) that pass through the screening process are taken into environmental assessment to identify a preferred alternative.

Threatened and Endangered Species – endangered species are those that are in danger of becoming extinct; threatened species are those that are in danger of being listed as endangered.

4(f) – publicly owned land including public parks, recreation areas, wildlife/waterfowl refuges or land of a historic site of National, State or local significance.

Study Area



CDOT SH 402 Environmental Assessment

Project Team Contact Information

Please feel free to contact the Project Managers or visit the project website for additional information or to submit your comments.

Jeff Manuel
Environmental Unit Manager
CDOT Region 4
1420 2nd Street, Greeley, CO 80631
(970)350-2170
jeff.manuel@dot.state.co.us

Michelle Li
Project Manager
J. F. Sato and Associates
5898 S. Rapp Street, Littleton, CO 80120
(303)797-1200
mli@jfsato.com

www.sh402ea.com

CDOT SH 402 Environmental Assessment

ENVIRONMENTAL ASSESSMENT
PUBLIC WORKSHOP #1

DATE: SEPTEMBER 19, 2002
TIME: 4:30 PM TO 7:30 PM

LOCATION: **CDOT LOVELAND RESIDENCY**
2207 EAST HIGHWAY 402
LOVELAND, CO

COMMENT SHEET

PLEASE HAND IN THIS SHEET BEFORE YOU LEAVE TODAY

OR MAIL IT TO J.F. Sato & Associates, 5898 S. Rapp Street, Littleton, CO 80120
Attn: Michelle Li, Environmental Services Manager

NO LATER THAN OCTOBER 3, 2002

Your suggestions and/or comments are needed at this time as we go forward to the next stages of this process – the environmental analysis and Environmental Assessment document. Please comment in the space below on: the alternatives under study, the screening criteria, additional information you believe should be considered, or other issues and concerns you believe are important.

Are you a: resident ☐ business owner ☐ commuter ☐ in the project area? Other ☐ ?

WOULD YOU LIKE TO BE ADDED TO OUR PROJECT MAILING LIST? PLEASE FILL IN THE INFORMATION BELOW:

NAME	STREET OR POST OFFICE BOX	TOWN/CITY AND ZIP CODE

OVER FOR ADDITIONAL COMMENTS ☐

CDOT

SH 402 Environmental Assessment

State Highway 402 from CR13 East to the I-25 Interchange
Environmental Assessment
April 15, 2003
Public Workshop

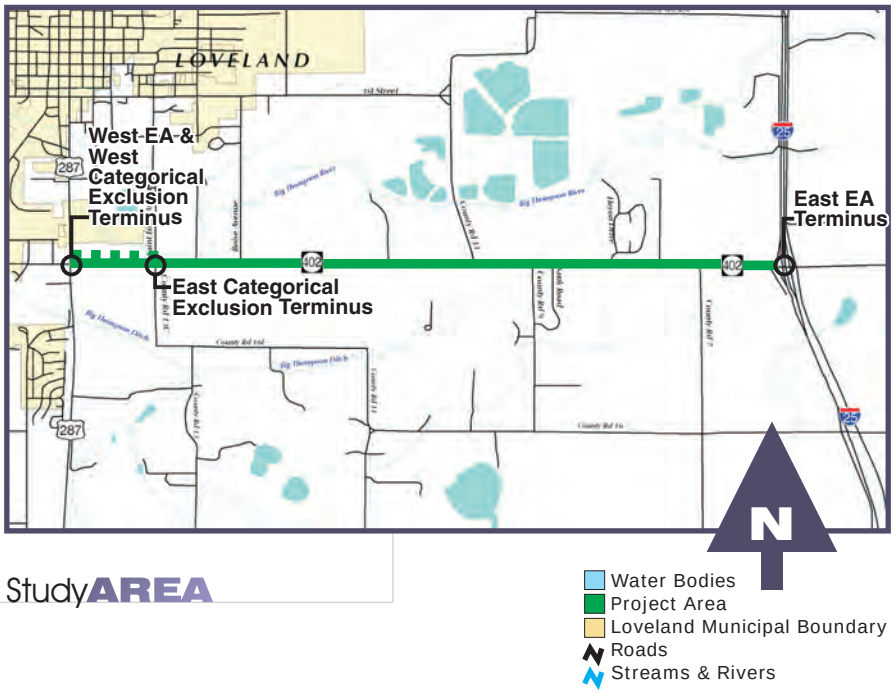
Welcome

Please sign the attendance roster.

Read the handout.

Visit our displays

If you have any questions, please ask one of our project team members.



Study**AREA**

Please make a written statement or comment, and fill out the attached comment sheet.
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CDOT

SH 402

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EA **PROCESS**

(please refer to graphic on the back of this page)

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Proposed **ACTION**

The proposed action under study is to evaluate potential improvements along SH 402 from US 287 east to the I-25 Interchange that improve safety and increase capacity. The EA process will evaluate various alternatives, and the No Action alternative, to determine a preferred alternative. The preferred alternative will meet the purpose and need of the project, to improve safety and increase capacity, while:

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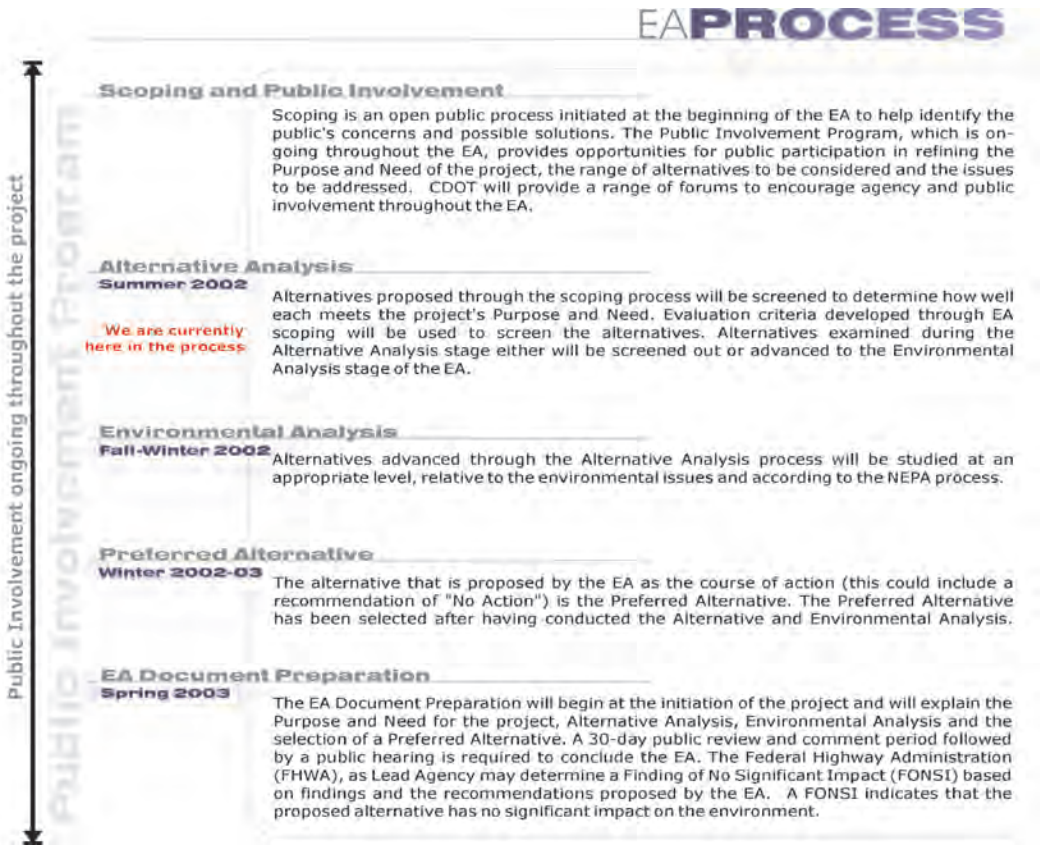

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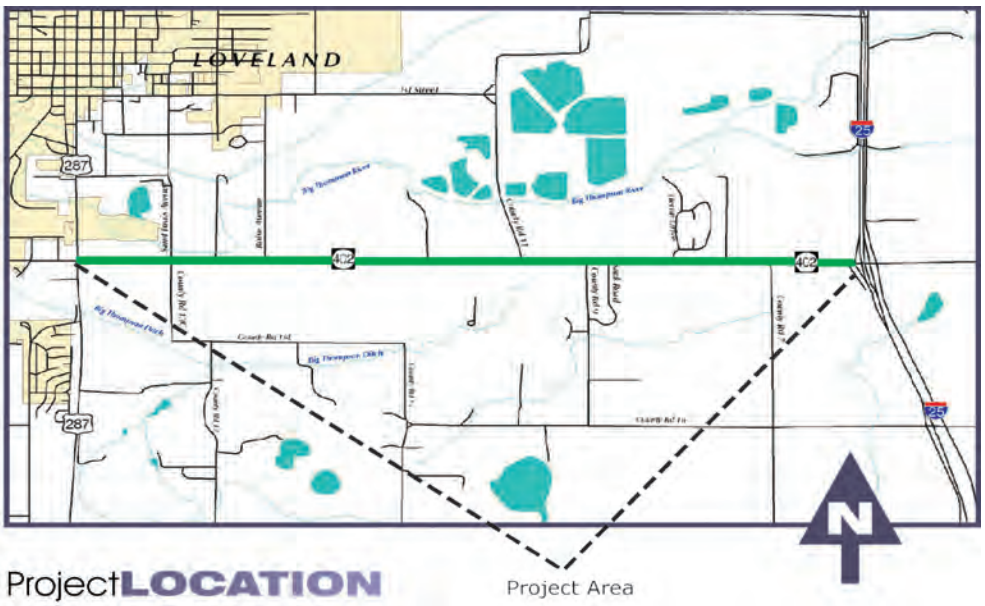

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CDOT SH 402 Environmental Assessment

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Mobility – the ability of traffic to move unimpeded through a highway or roadway corridor.

NEPA – National Environmental Policy Act of 1969 is our nation's basic charter for protection of the environment. It establishes policy, sets goals, and provides

the means for carrying out the policy. In accordance with NEPA, all federal agencies must prepare a written statement on the environmental impacts of a proposed action. The provisions to ensure that federal agencies act according to the letter and spirit of NEPA are in the Council on Environmental Quality (CEQ) regulations for implementing NEPA (43 CFR 1500-1508).

No Action Alternative – alternative that represents projected conditions within the study area without the implementation of improvement and that serves as a baseline for the comparison of the build alternatives.

Preferred Alternative – alternative identified through the EA process that is the action recommended to meet the Purpose and Need of the project.

Prime Farmland – soil units that have the best combination of physical and chemical characteristics for producing feed, food, forage, fiber and oilseed crops as identified in accordance with the Farmland Protection Policy Act of 1981.

Purpose and Need – the underlying reason for conducting the studies and analysis; the purpose and need to which the agency is responding by proposing alternative solutions.

Right of Way – a general term denoting land, property, or interest therein, usually in a strip acquired for or devoted to transportation purposes.

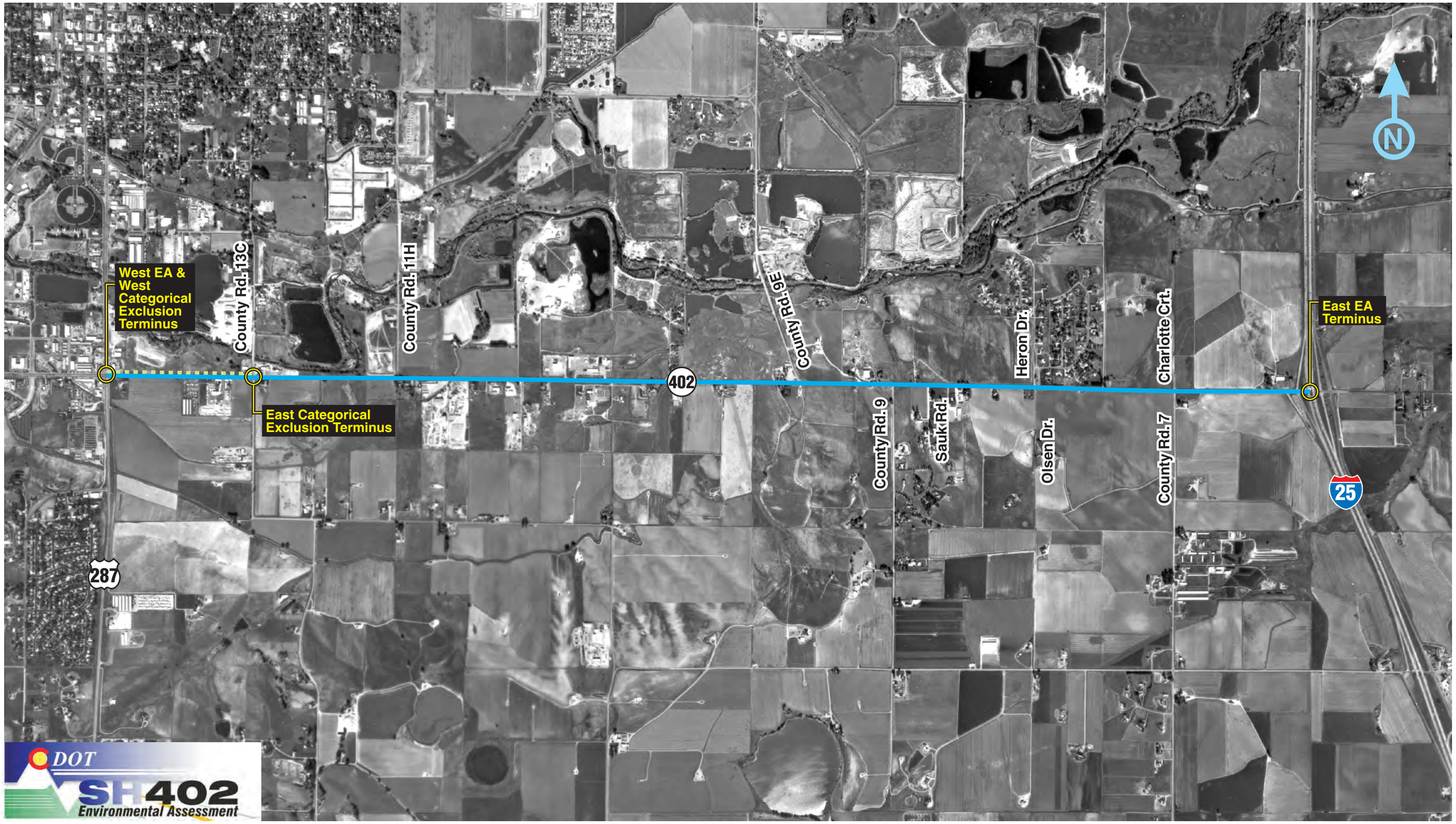
Scoping – an open public process initiated at the beginning of the EA to help identify the public's concerns and recommended solutions.

Screening (alternatives analysis) – A systematic process through which a broad range of alternatives is narrowed down to those that best meet the goals of the project based on the purpose and need of the project and key issues and concerns related to the study area. Alternative(s) that pass through the screening process are taken into environmental assessment to identify a preferred alternative.

Threatened and Endangered Species – endangered species are those that are in danger of becoming extinct; threatened species are those that are in danger of being listed as endangered.

4(f) – publicly owned land including public parks, recreation areas, wildlife/waterfowl refuges or land of a historic site of National, State or local significance.

Study Area



CDOT SH 402 Environmental Assessment

Project Team Contact Information

Please feel free to contact the Project Managers or visit the project website for additional information or to submit your comments.

Jeff Manuel
Environmental Unit Manager
CDOT Region 4
1420 2nd Street, Greeley, CO 80631
(970)350-2170
jeff.manuel@dot.state.co.us

Michelle Li
Project Manager
J. F. Sato and Associates
5898 S. Rapp Street, Littleton, CO 80120
(303)797-1200
mli@jfsato.com

www.sh402ea.com

CDOT SH 402 Environmental Assessment

PUBLIC WORKSHOP #2

DATE: April 15, 2003
TIME: 4:00 TO 7:00 PM
LOCATION: CDOT Loveland Residency, 2207 SH 402, Loveland, CO

COMMENT SHEET

PLEASE HAND IN THIS SHEET BEFORE YOU LEAVE TODAY
OR MAIL POSTAGE PAID TO:
J.F. Sato & Associates, 5898 S. Rapp Street, Littleton, CO 80120
Attn: Michelle Li, Project Manager
OR CALL WITH ANY COMMENTS 303-797-1200

No later than May 1, 2003

Are you a: resident☐ business owner☐ commuter☐ other☐ in the project area?

Did you attend the first SH 402 EA Public Workshop held on September 19, 2002?_____

Have you received the project factsheets in the mail?_____

Do you support the potential widening of SH 402 between US 287 and the I-25 Interchange?
Why or why not? _____

_____

_____

_____

Which alternative do you prefer? Why?_____

_____

_____

_____

Was the material presented tonight helpful and easy to understand? _____

Do you have any suggestions for other ways the project team can relay project information to you?_____

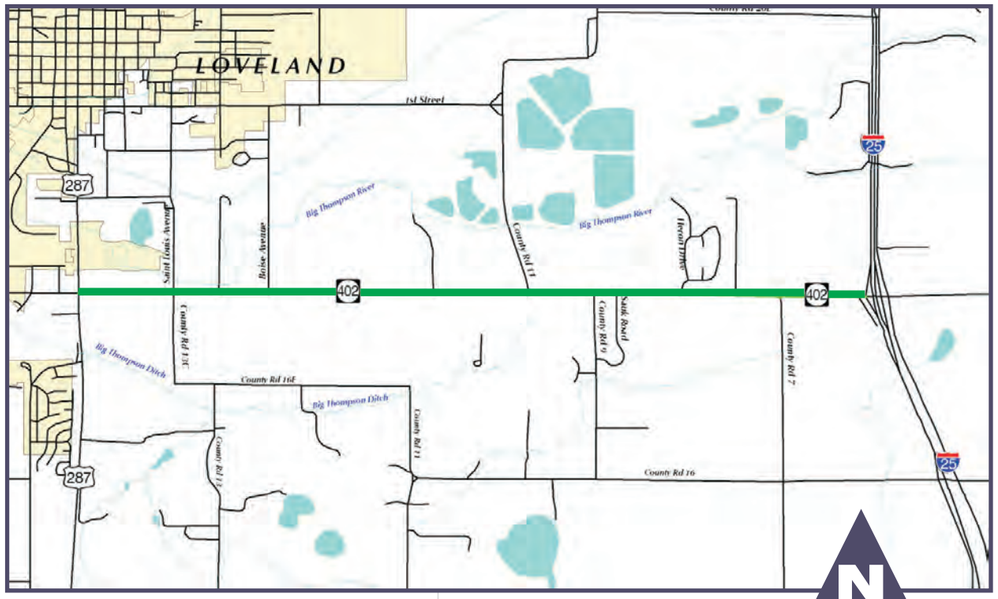
Can you recommend anyone else we need to contact within the project area? _____

_____

WOULD YOU LIKE TO BE ADDED TO OUR PROJECT MAILING LIST? PLEASE FILL IN THE INFORMATION BELOW:

NAME	STREET OR POST OFFICE BOX	TOWN/CITY AND ZIP CODE

OVER FOR ADDITIONAL COMMENTS ☐



Project**LOCATION**

- Water Bodies
- Project Area
- Loveland Municipal Boundary
- Roads
- Streams & Rivers

Colorado Department of Transportation - SH402
C/O J.F. Sato and Associates
5898 South Rapp Street
Littleton, Colorado 80120

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Carrier Route Rural Route 001

Rural Route Patron
Loveland, CO 80538

DOT

SH 402

State Highway 402 from US 287 East to the I-25 Interchange

October 2001

FACT SHEET #1

This is the first in a series of Fact Sheets to keep you up-to-date regarding the Environmental Assessment (EA) for SH 402 from US 287 to the I-25 Interchange.

The Colorado Department of Transportation (CDOT) has retained J.F. Sato and Associates (JFSA) to perform the EA for SH 402 from US 287 East to the I-25 Interchange.

Project**BACKGROUND**

The Federal Highway Administration (FHWA), as the lead agency, and the Colorado Department of Transportation, Region 4 (CDOT) have initiated an Environmental Assessment (EA) to evaluate potential improvements along SH 402 from US 287 east to the I-25 Interchange. As the lead federal agency, FHWA has the authority and responsibility to make the final decisions. CDOT is the applicant and is responsible for the preparation of the EA.

Planning and construction of improvements along the approximately 4-mile stretch of SH 402 have been ranked 10th in the North Front Range (NFR) 2020 Regional Transportation Plan, and the project is currently in the State-wide Transportation Improvement Plan for highway improvements. The EA will identify alternatives to improve mobility and safety, which will include the No Action alternative. Maintaining or improving access to the residences, businesses, and the park-n-Ride within the study area will also be evaluated. CDOT will examine alternatives for the ability to meet these goals now and in 20 years.

EA**PROCESS**

(please refer to graphic on page 3)

CDOT is currently in the Scoping phase of the project. Scoping is a process conducted early in the project that is open to the public (agencies and general public) to identify the range or “scope” of issues and alternatives to be addressed during the environmental studies and in the EA.

Formal Scoping will conclude in Fall 2001. Public Involvement, however, is ongoing throughout the process to keep interested individuals, groups, and agencies informed about the project and to solicit input at key milestones in the project.

Proposed **Action**

The proposed action under study is to evaluate potential improvements along SH 402 from US 287 east to the I-25 Interchange that improve safety and increase capacity. The EA process will evaluate various alternatives, and the No Action alternative, to determine a preferred alternative. The preferred alternative will meet the purpose and need of the project, to improve safety and increase capacity, while:

- **Considering compatibility with local and state plans**
- **Providing on-going coordination with federal, state and county agencies**
- **Protecting or maintaining community values and the environment**
- **Minimizing utility, traffic, and access impacts during construction if an action alternative is the preferred alternative**

The EA will be conducted in compliance with the National Environmental Policy Act (NEPA) and will encourage public involvement throughout the process. CDOT is committed to maintaining the environmental integrity, both natural and human, of the study area.

Coordination/**Public Involvement**

Coordination of this effort will be through CDOT and its consultant, J.F. Sato and Associates (JFSA).

Future Public Workshops will be advertised, and updates on the status of the EA will be provided through periodic project fact sheets, notices, and the project Web site, www.sh402ea.com, at key milestones during the project.

Your input is essential to the process in order to solicit input and help in issue identification. CDOT is asking for your assistance. Please take a few minutes to answer the postage-paid survey included in this Fact Sheet. If there are any issues pertinent to the study area not listed in the survey, please include them in the comment section. We look forward to hearing from you!

Opportunities for**Public Involvement**

Please feel free to contact;Jeff Manuel, Environmental Unit Manager, CDOT Region 4; Michelle Li, Project Manager, JFSA; or Melanie Pyryt, Public Involvement Manager, JFSA with any additional questions or comments you may have regarding this project, or to be added to the mailing list.

Jeff's mailing address is 1420 2nd Street, Greeley, CO 80631, his e-mail is jeff.manuel@dot.state.co.us, and his phone number is (970) 350-2170.

Michelle's mailing address is 5898 S. Rapp Street, Littleton, CO 80120, her e-mail is mli@jfsato.com, and her phone number is (303) 797-1200.

Melanie's mailing address is 5898 S. Rapp Street, Littleton, CO 80120, her e-mail is mpyryt@jfsato.com, and her phone number is (303) 797-1200.

You can also visit the project Web site at www.sh402ea.com.

EA**PROCESS**

Public Involvement Program

Public Involvement ongoing throughout the project

Scoping and Public Involvement
Fall 2001

We are currently here in the process

Scoping is an open public process initiated at the beginning of the EA to help identify the public's concerns and possible solutions. The Public Involvement Program, which is on-going throughout the EA, provides opportunities for public participation in refining the Purpose and Need of the project, the range of alternatives to be considered and the issues to be addressed. CDOT will provide a range of forums to encourage agency and public involvement throughout the EA.

Alternative Analysis
Mid-Winter 2001

Alternatives proposed through the scoping process will be screened to determine how well each meets the project's Purpose and Need. Evaluation criteria developed through EA scoping will be used to screen the alternatives. Alternatives examined during the Alternative Analysis stage either will be screened out or advanced to the Environmental Analysis stage of the EA.

Environmental Analysis
Winter 2001

Alternatives advanced through the Alternative Analysis process will be studied at an appropriate level, relative to the environmental issues and according to the NEPA process.

Preferred Alternative
Summer 2002

The alternative that is proposed by the EA as the course of action (this could include a recommendation of "No Action") is the Preferred Alternative. The Preferred Alternative has been selected after having conducted the Alternative and Environmental Analysis.

EA Document Preparation
Summer 2002

The EA Document Preparation will begin at the initiation of the project and will explain the Purpose and Need for the project, Alternative Analysis, Environmental Analysis and the selection of a Preferred Alternative. A 30-day public review and comment period followed by a public hearing is required to conclude the EA. The Federal Highway Administration (FHWA), as Lead Agency may determine a Finding of No Significant Impact (FONSI) based on findings and the recommendations proposed by the EA. A FONSI indicates that the proposed alternative has no significant impact on the environment.

Important**CONTACTS**

Project**WEBSITE**
WWW.SH402EA.COM

Public Involvement**MANAGER (JF Sato)**
MPYRYT@JFSATO.COM

Environmental Unit**MANAGER (CDOT)**
JEFF.MANUEL@DOT.STATE.CO.US

Contact**INFORMATION**

Please feel free to contact Jeff Manuel, Environmental Unit Manager, CDOT Region 4, or Michelle Li, Project Manager, JFSA, with any questions or comments you may have regarding this project or to be added to the mailing list.

Jeff's mailing address is 1420 2nd Street, Greeley, CO 80631
jeff.manuel@dot.state.co.us
970.350.2170

Michelle's mailing address is 5898 S. Rapp Street, Littleton, CO 80120
mli@jfsato.com
303.797.1200

Future**PUBLIC INVOLVEMENT OPPORTUNITIES**

Updates on the status of the EA will be provided at key milestones during the project through Factsheets, notices, and the project web site (http://www.sh402ea.com).

Colorado Department of Transportation - SH402
C/O J.F. Sato and Associates
5898 South Rapp Street
Littleton, Colorado 80120

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CDOT

SH 402 Environmental Assessment

State Highway 402 from US 287 East to the I-25 Interchange

November 2002

FACTSHEET #2

This is the second in a series of Factsheets reporting the status of the SH 402 (from US 287 east to the I-25 Interchange) Environmental Assessment.

This Factsheet provides a summary of the first Public Workshop (held on September 19, 2002) as well as, identifies the alternatives that have gone through alternatives analysis, and the remaining Environmental Assessment schedule.

Project**BACKGROUND**

The Federal Highway Administration (FHWA), as the lead agency, and the Colorado Department of Transportation, Region 4 (CDOT), have been conducting an Environmental Assessment (EA) to evaluate potential transportation improvements along SH 402 from US 287 east to the I-25 Interchange. As the lead federal agency, FHWA has the authority and responsibility to make the final decisions. CDOT is the applicant and is responsible for the environmental assessment process and documentation.

Next**STEPS**

Through scoping and alternative analysis, two alternatives, Meander and No Action, have progressed into the next stage of the study process. During the next step environmental analysis will be conducted on each alternative to determine their impact on air quality, water quality, noise, and other environmental factors.

Project**PURPOSE AND NEED**

The purpose of this project is to improve travel and safety on SH 402 within the study area. The difficulty experienced by drivers making a left turn to or from the roadway contributes to this need. As traffic volumes increase, it can be expected that the current mobility and safety issues will become worse if improvements are not made to the existing roadway.

First Workshop**SUMMARY**

The Public Workshop was held on September 19, 2002 at the CDOT Loveland Residency, located at 2207 East SH 402, Loveland. The Public Workshop was announced through local newspaper ads and invitations sent to those on the mailing list, including local, state and federal agencies and all box holders on the rural routes in the study area.

The purpose of this Public Workshop was to present information and solicit input on the following:

- Project Overview
- Project Process
- Project Schedule
- Potential Alternatives to date
- Screening Criteria

The workshop format encouraged discussion directly with CDOT and project team members about any aspect of the project. Participants were encouraged to identify specific areas that were of interest to them on any of several available maps. Participants wrote their comments on note cards and adhered them to the appropriate display. Displays included information on traffic data, alternative alignments, environmental factors, and screening criteria. Comment sheets were also available for participants to fill out. The project team received several comments commending the level of public involvement.

Approximately fifty people attended the workshop, and about 26 written comments were received. The comments are grouped by topic and summarized on the next page.

Workshop attendees discuss project

Public **WORKSHOP COMMENTS**

No Action Alternative - ***(No improvements will be made to the roadway, however, current maintenance practices will continue)***
No comments were received on this alternative.

Alternative # - ***(Maintain existing centerline, add lanes north and south of existing pavement)***
Comments on this Alternative included concern for saving trees adjacent to SH 402. Comments also concerned the need for more than two lanes at the interchange of SH 402 and I-25. One comment indicated that this Alternative is more fair than the others.

Alternative #2 - ***(Maintain north edge R-O-W and shift roadway south)***
Some comments on this Alternative expressed approval of its ability to maintain the northern right-of-way. Others noted that the alignment would cause relocation of residents and businesses and were, therefore, not in favor of it. There was also one comment concerning its ability to facilitate left turns onto SH 402.

Alternative #3 - ***(Maintain south edge pavement and shift roadway north)***
Comments on this Alternative included the desire to improve the intersection of SH 402 and CR 9 and concern over potential impacts to an irrigation ditch along SH 402.

Alternative #4 - ***(Meander-Shift roadway north with slight meander (shift) at both ends of project)***
Comments on this Alternative included approval for its ability to miss several privately owned structures and trees. It was widely viewed as the best compromise, balancing transportation improvements and minimizing impacts to the human & natural environment. Also, it was mentioned that the intersection with LCR 9 should receive a priority under this alternative. This alternative received the most favorable comments.

Maintain Rural Character
Some attendees noted a desire to maintain the rural character of the area by protecting characteristics such as the Osborn Farm and irrigation ditches adjacent to SH 402.

Safety
Several attendees addressed the issue of safety, including the need for left turn lanes, a wider shoulder, and improved sight distance at intersections.

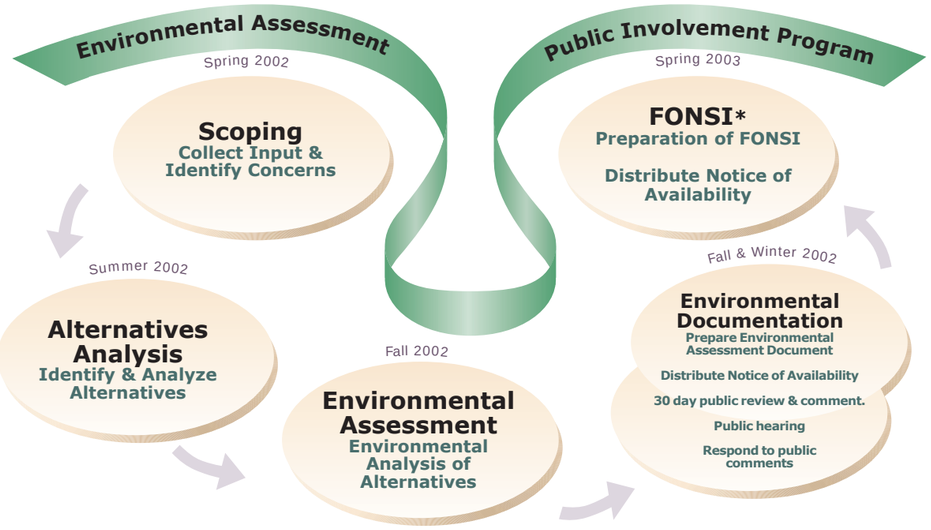
Noise
Some attendees suggested that treatments such as earthen berms or asphalt pavement be used to maintain low noise levels.

Project **STUDY AREA**
Larimer County, Colorado

Use of workshop **COMMENTS**

Both agency and public comments have been compiled and will be reviewed by CDOT and the project team. Where possible, the items raised during the Public Workshop will be incorporated into the conceptual design.

Project **SCHEDULE**



*The FHWA may determine a Finding of No Significant Impact (FONSI) based on the findings and the recommendations proposed by the EA. A FONSI indicates that the proposed alternative has no significant impact on the environment. Relevant comments received during the public review and comment period, and the public hearing, will be taken into consideration as FHWA makes it's decision.

SH 402 **FROM US 287 EAST TO CR 13 (ST. LOUIS AVE.) CATEGORICAL EXCLUSION**

CDOT is performing a Categorical Exclusion (CatEX) for the portion of SH 402 between US 287 and St. Louis Avenue (CR13). The proposed action will address roadway access to adjacent properties and ensure that SH 402 transportation safety and mobility issues are coordinated with the City of Loveland and proposed development projects. A CatEX is a streamlined environmental evaluation process and will identify impacts from the proposed action and mitigation measures required for implementation. CDOT is conducting the CatEX in coordination with FHWA and Loveland so that future development, including the Waterford Development project (which was approved by Loveland), can proceed.

The action is being evaluated as a CatEX since it is not expected to have significant impacts to environmental features and resources such as land use considerations and natural resources. The CatEX is being performed concurrently with the SH 402 EA and will use environmental resource information gathered for the EA. Completion of the CatEX is expected in early 2003. Please contact Amy Baerenklau (J. F. Sato and Associates) at 303-797.1200 or contact her via email at amy@jfsato.com.

CDOT

SH 402 Environmental Assessment

State Highway 402 from US 287 East to the I-25 Interchange

April 15, 2003

FACTSHEET #3

This is the third in a series of Factsheets to keep you up-to-date regarding the Environmental Assessment (EA) for SH 402 from US 287 east to the I-25 Interchange. This Factsheet is to notify you of the April 15, 2003 Public Workshop, update you on alternative refinements and solicit your comments.

Project**Background**

The purpose and need of the project is to improve travel and safety on SH 402 between US 287 and the I-25 Interchange. There are two concurrent projects along SH 402 that are being conducted in concert. This factsheet focuses on the stretch of SH 402 between CR 13 and the I-25 interchange that is being evaluated in the EA. The EA is studying improving the safety and mobility of SH 402 by widening the facility from 2 to 4 lanes at a speed limit of 55 mph; this cross section is a rural design that could be modified to an urban section in the future should this be warranted. The EA is being closely coordinated with the Category Exclusion so that the design at CR 13, where the two project areas meet, is compatible.

The portion of SH 402 between US 287 and CR 13 (St. Louis Avenue) is being studied as a categorical exclusion (CE). A CE is a streamlined National Environment Policy Act study conducted when there are no significant human or natural environmental impacts (land use, cultural, ecological, wetlands, hazardous materials, etc…). This study is expected to conclude in the next few months. The City of Loveland and Larimer County have been partners on the project and other government entities as well as the adjacent landowners have been contacted during the CE. This portion of SH 402 is designed to match the City of Loveland's urban roadways with 2 lanes in each direction separated by a raised median. Also included are a detached sidewalk, bike lane, acceleration / deceleration lanes and a left turn lane at the US 287 intersection.

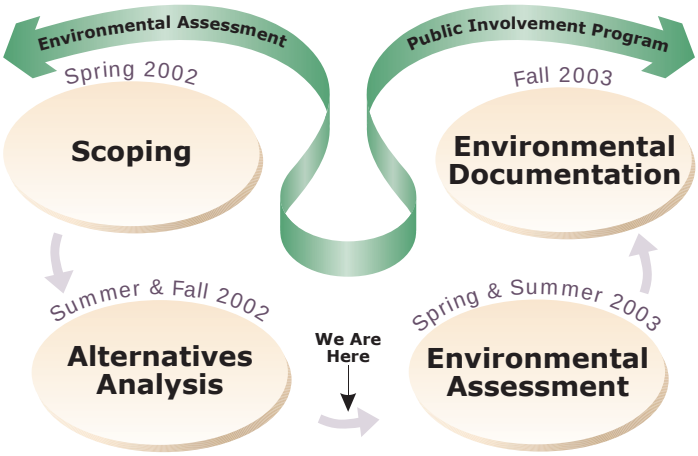
EA**Process**

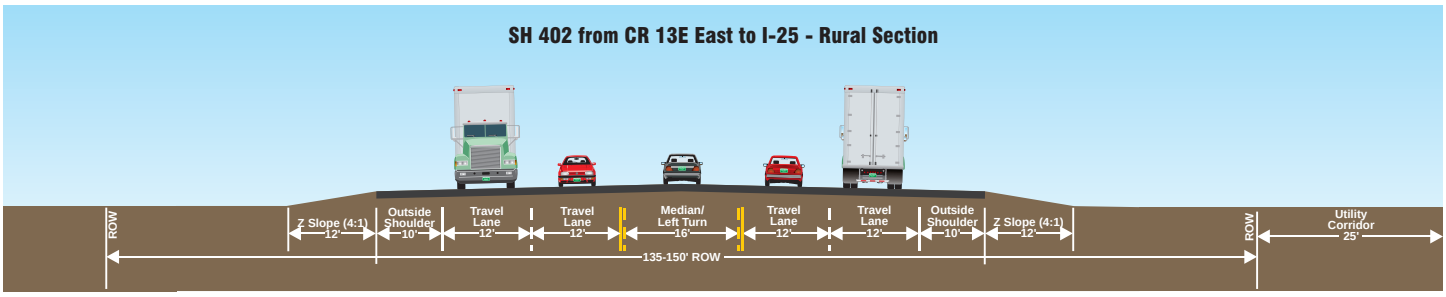
CDOT is currently completing the Alternative Analysis phase of the EA study. During the September 19, 2002 Public Workshop CDOT received valuable comment from the public and agencies about the 4 action alternatives under consideration. All action alternatives widen the facility from 2 to 4 lanes, provide a painted median for left turns between CR 13 and the I-25 Interchange, include a 10 foot bike lane/shoulder and a 25 foot utility corridor on the south side. The alternatives are:

- widen from the centerline to both the north and south
- widen entirely to the north
- widen entirely to the south
- a combination of widening to the north in some areas and to the south in other areas in an effort to minimize the potential impacts to the natural environment and adjacent properties
- No Action-existing facility would remain with current operation and maintenance practices in effect

As a result of the Public Workshop and CDOT review, the Project Team decided to refine the alternatives to further reduce the potential impacts. The initial 4 action alternatives were at a right-of-way (ROW) width of 200', CDOT has reduced this ROW to approximately 150'. This changes the number of residences and businesses that would need to be acquired and limits the amount of natural resources affected (i.e. wetlands, farmlands, and floodplain area).

EA**Process Diagram**





SH 402 from US 287 East to the I-25 Interchange
Environmental Assessment
2nd Public Workshop

Date: Tuesday, April 15, 2003
Between: Drop in any time between 4 and 7 pm
Location: CDOT Loveland Residency
Address: 2207 East Highway 402, Loveland, CO

The purpose of the second Public Workshop is to focus on the EA and provide information on:

- Modified Alternatives & Alternatives' Analysis
- Modified Screening Results
- Recommended Alternatives for further environmental study and provide you with an update on the project schedule.

Contact**INFORMATION**

For additional information please contact either:

Jeff Manuel
970.350.2170
CDOT, R-4
Project Manager
1420 2nd Street, Greeley, CO 80631

Michelle Li
303.797-1200
J. F. Sato and Associates
Project Manager
5898 S. Rapp Street, Littleton, CO 80120

Or e-mail from the project website: www.SH402EA.com

Colorado Department of Transportation - SH402
C/O J.F. Sato and Associates
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SH 402 Environmental Assessment

State Highway 402 from US 287 East to the I-25 Interchange

July 2003

FACTSHEET #4

This is the fourth in a series of Factsheets to keep you up-to-date regarding the Environmental Assessment (EA) for SH 402 from US 287 east to the I-25 Interchange.

Project**Background**

The purpose and need of the project is to improve travel and safety on SH 402 between US 287 and the I-25 Interchange. The EA is studying **improving the safety and mobility** of SH 402 by widening the facility from 2 to 4 lanes at a speed limit of 55 mph; this cross section is a rural design that could be modified to an urban section in the future should this be warranted. A Categorical Exclusion (CE) is being conducted for SH 402 between US 287 and CR 13 this study is also a part of the EA. The cross section for the portion of SH 402 between US 287 and CR 13 is an urban design that has two through travel lanes in each direction as well as acceleration/ deceleration lanes for traffic entering and exiting the road. There will also be a raised median for this section and a left turn lane at the US 287 intersection. Please refer to the cross sections illustrated at the bottom of the page.

Second**PublicWorkshop**

The second Public Workshop was held on April 15, 2003, at the CDOT Loveland Residency, located at 2207 East SH 402, Loveland. The purpose of this Public Workshop was to present information and solicit input on the following:

- Modified Alternatives & Alternatives Analysis
- Modified Screening Results
- Recommended Alternatives for further environmental study

The workshop format encouraged discussion directly with CDOT and project team members about the project. Participants were encouraged to identify specific areas that were of interest to them on any of several available maps. Displays included traffic data, alternative alignments, environmental factors, and screening criteria. Comment sheets were also available for participants to fill out.

Public**Comments**

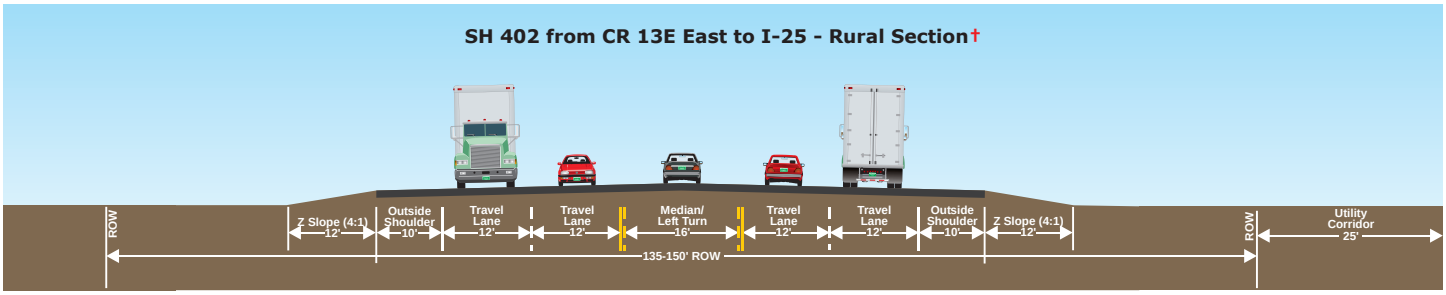
Comments from the Workshop included:

Modified Alternatives & Alternatives Analysis

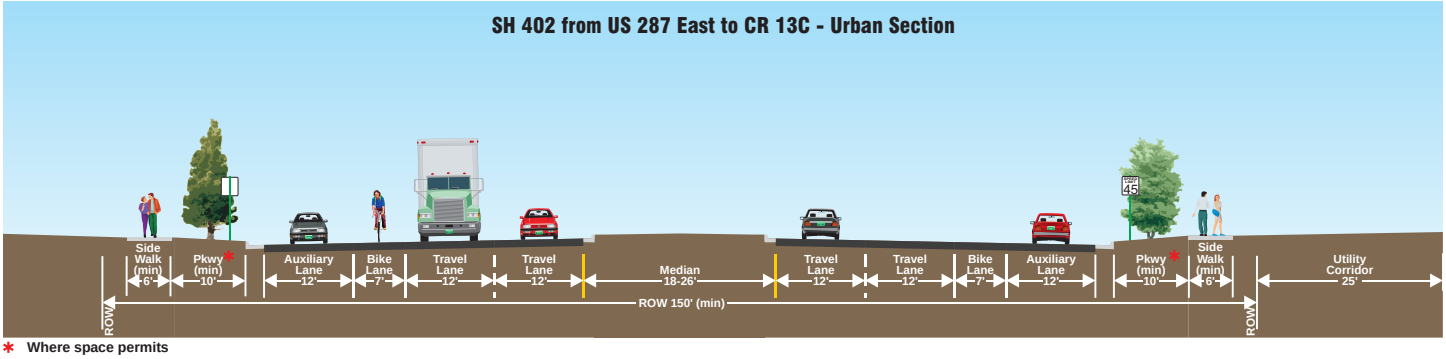
- **Support for improvements** to the existing SH 402 roadway between US 287 and the I-25 interchange.
- **Reduced the right-of-width from 225' to 150' for all the action alternatives and the resultant lessened impacts**
- Concern over **current safety of the roadway and desire to increase the ease of making left turns support for the meander alternative**
- **Limited number** of comments were received in **support of other alternatives due to direct impacts to property owners adjacent to the corridor**
- Concern regarding the **environmental impacts**, specifically potential for increased noise, traffic, growth, and the need for property to be purchased to construct a wider facility
- Rural character of the area

Comment**Usage**

Both agency and public comments have been compiled and will be reviewed by CDOT and the project team. Where possible, the items raised during the Public Workshop will be incorporated into the alternatives' conceptual design.



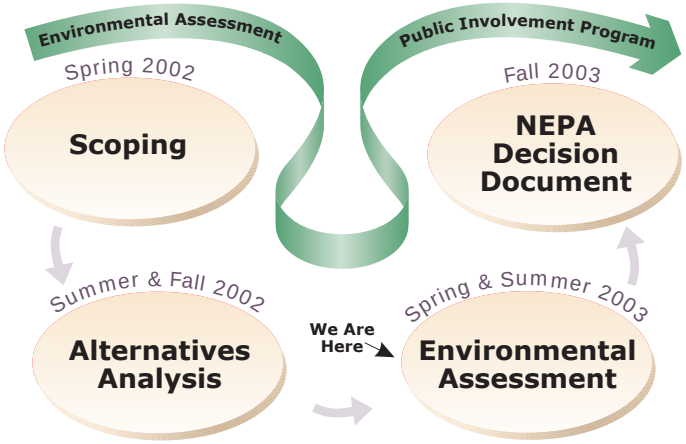
† ROW width was narrowed from 225' to 175' to reduce potential impacts



* Where space permits

Next Steps/**Project Schedule**

The Meander Alternative and the No Action Alternative will progress into the next phase of study environmental analysis. These two alternatives will be studied in detail to identify the preferred alternative. The preferred alternative will be the action CDOT recommends to FHWA in the EA document that will be made available for public review for 30 days. During the 30 - day review period, a public hearing will be held to encourage public comment on the study and its recommendation. It is anticipated that the EA document will be completed in the Summer of 2003. FHWA's decision will serve as the direction for potential improvements to SH 402 between US 287 and the I-25 Interchange.



Contact**INFORMATION**

For additional information please contact:

Jeff Manuel
970.350.2170
CDOT, R-4
Project Manager
1420 2nd Street, Greeley, CO 80631

Michelle Li
303.797.1200
J.F. Sato and Associates
Project Manager
5898 South Rapp Street, Littleton, CO 80120

Or e.mail from the project website:
www.SH402EA.com

Colorado Department of Transportation - SH402
C/O J.F. Sato and Associates
5898 South Rapp Street
Littleton, Colorado 80120

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What you can look forward to in Fall 2004:

Publication of EA Document • 30-Day Agency and Public Comment Period • Public Hearing
How Will You Know? • Mailings • Newspaper Ads • Website

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April 2004

SH 402
Environmental Assessment

The Colorado Department of Transportation (CDOT) has been conducting an Environmental Assessment (EA) to find ways to improve safety and travel along SH 402 from US 287 to I-25. Your participation is greatly appreciated.

DOT SH 402 Environmental Assessment

Colorado Department of Transportation
C/O J.F. Sato and Associates
5898 South Rapp Street
Littleton, CO 80120

Project BACKGROUND

Planning and construction of improvements along the stretch of SH 402 between US 287 and I-25 (approximately 4 miles), have been ranked 10th in the North Front Range 2020 Transportation Plan, and the project continues to be included in the state wide Transportation Improvement Plan. An Environmental Assessment process was initiated in the fall of 2001. This study continues to be conducted in close coordination with the Federal Highway Administration (FHWA), Larimer County, and the City of Loveland. The purpose of the project is to provide travel and safety improvements to the existing roadway by widening the facility from 2 to 4 lanes.

Project STATUS

Project Scoping was conducted to collect input and identify concerns associated with the project in spring 2002.

Public Workshops have been held. The first, in September 2002, collected input on alternatives and project screening. The second, in April 2003, collected input on alternatives recommended for further environmental study.

Environmental Assessment (EA) research was conducted in early 2003 into summer 2004. The Meander Alternative and the No Action Alternative continued into this phase of study. These two alternatives have been studied in detail and will lead to identification of the preferred alternative. The preferred alternative will be the action CDOT recommends to FHWA.

A Traffic Update is needed to support local and regional transportation planning efforts. CDOT is currently updating the traffic analysis to reflect anticipated demand in year 2030. Initial results of the traffic analysis indicate the need for improvements west of the SH 402/US 287 intersection, extending approximately 1200 feet, to accommodate through lanes and turn lanes at the intersection.

Public Involvement Opportunities As CDOT moves forward in the study, public input remains important. Your input is taken into consideration throughout the process and in making a final decision.

Future opportunities include:

- A 30-day review and comment period of the EA document
- A Public Hearing

In addition, please feel free to call either Carol or Michelle to discuss the project or to request a one-on-one meeting.

WE LOOK FORWARD TO HEARING FROM YOU.....

EA PROCESS

Project CONTACTS

Please contact us if you have questions or to be added to the mailing list.

Carol Parr, CDOT 970.350.2170
Carol.Parr@dot.state.co.us

Michelle Li, JFSA 303.797.1200
Mli@jfsato.com
http://www.sh402ea.com

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION
Region 4
1420 Second Street
Greeley, CO 80631
(970) 350-2170
FAX: (970) 350-2179

Date:

Name
Address

Subject: **SH 402 from US 287 east to the I-25 Interchange Environmental Assessment**

Dear Property Owner/Business Operator:

The Colorado Department of Transportation (CDOT), Region 4 is conducting an Environmental Assessment (EA) to evaluate potential improvements along SH 402 from US 287 east to the I-25 Interchange. The lead agency for the study is the Federal Highway Administration (FHWA) who is responsible for the decision on the Preferred Alternative. This study is being conducted in compliance with the National Environmental Policy Act of 1969 (NEPA) as amended; the Council on Environmental Quality (CEQ) regulations implementing NEPA; FHWA regulations; and other pertinent environmental regulations. A final decision on the Preferred Alternative is anticipated in late 2004.

A traffic update is needed to support local and regional transportation planning efforts. CDOT is currently updating the traffic analysis to reflect anticipated demand in year 2030. Initial results of the traffic analysis indicate the need for improvements west of the SH402/US 287 intersection for approximately 1200 feet.

Potential improvements to the west of US 287 are illustrated on the attached project map. These improvements would require additional right-of-way that may or may not impact your property or the operation of your business.

CDOT would like to extend an invitation to meet with you to discuss the project, alternatives under consideration, potential impact to your property/business, environmental findings to date and upcoming opportunities for public involvement.

Please contact me at (970) 350-2170 or Michelle Li, Project Manager with the consultant team of J.F. Sato & Associates at (303) 797-5050, ext. 1344 to set up a date and time to meet. In the meantime, you will be placed on our project mailing list to receive all future mailings based on the above mailing name and address. If you would like us to use a different mailing address, please let either of us know.

Sincerely,

Carol Parr
Environmental Manager
CDOT, R-4

Attachment: US 287 & SH 402 Intersection – Potential Improvements Map

DOT SH 402

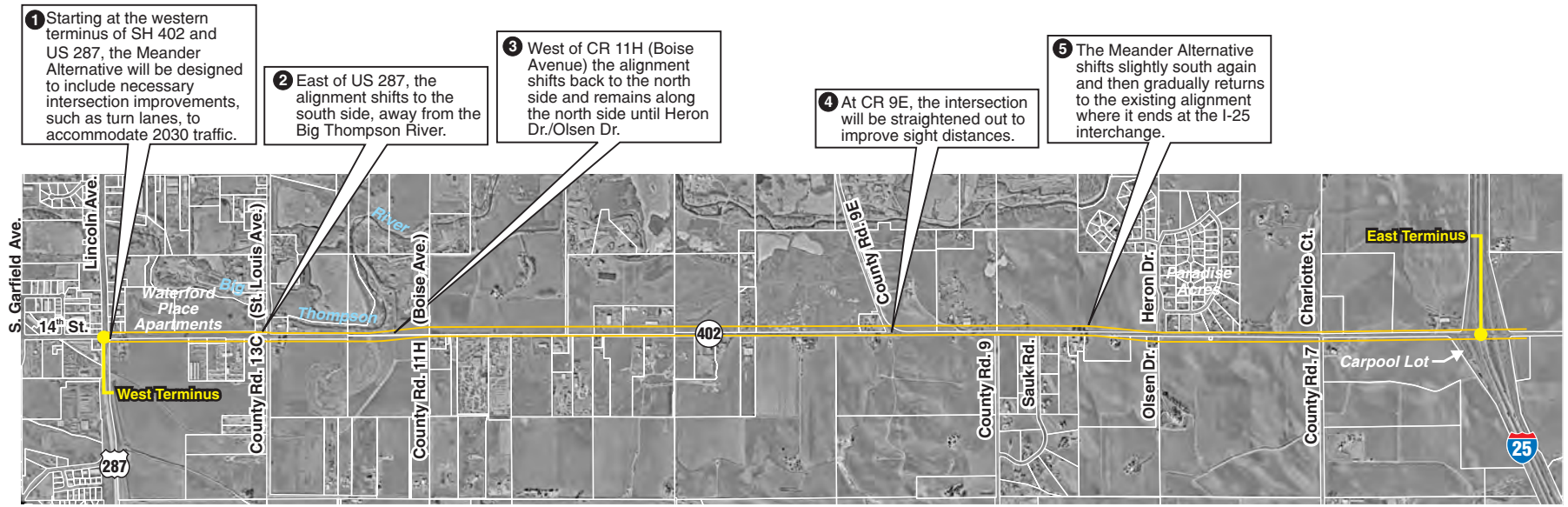
April 2004

US 287 & SH 402 Intersection - Potential Improvements

Making Progress

The Colorado Department of Transportation (CDOT) is completing an environmental assessment (EA) on improving the safety and mobility of **State Highway 402** between US 287 and I-25. The EA compares a **Meander Alternative** and a **No Action Alternative**, and determines impacts on various elements of the human and natural environments for each alternative. **Look for the published document in 2005, and be sure to review and comment on it.**

Meander Alternative



No Action Alternative

As required by the National Environmental Policy Act (NEPA), the No Action Alternative has been considered throughout the EA process as a viable alternative. This alternative would result in no changes to the existing highway.

What's Next? - In 2005

- Watch for mailings and newspaper ads on publication of the EA document
- Review and provide comments on the EA document
- Attend the public hearing
- Visit the website for project information

* In addition, please feel free to call either Carol Parr or Michelle Li to discuss the project or to request a one-on-one meeting.

We look forward to your participation!

www.sh402ea.com

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SH 402 Environmental Assessment

SH 402 Project Corridor

Looking forward to your participation in 2005...

Please see inside for details

Please contact us if you have any questions or to be added to the mailing list.

Carol Parr • CDOT Region 4 • 970-350-2170 • Carol.Parr@dot.state.co.us

Michelle Li • J.F. Sato and Associates • 303-797-5039 • mli@jfsato.com

www.sh402ea.com

DOT SH 402 Environmental Assessment

Fall 2005 Factsheet

Overview

Planning and construction of improvements along the stretch of State Highway 402 between US 287 and I-25 (approximately 4 miles), have been ranked 10th in the North Front Range 2020 Transportation Plan, and the project continues to be included in the Statewide Transportation Improvement Plan (STIP). An Environmental Assessment process was initiated in the fall of 2001. This study continues to be conducted in close coordination with the Federal Highway Administration (FHWA), Larimer County, and the City of Loveland. The purpose of the project is to provide travel and safety improvements to the existing roadway by widening the facility from two to four lanes.

Since We Last Contacted You

The project team has been immersed in the preparation of the EA document. The environmental analysis focused on impacts associated with the No Action Alternative (leaving SH 402 as it currently is) and the Meander Alternative (as illustrated on the back page of this newsletter) and proposed mitigation efforts. The document is nearing completion with the exception of some additional data gathering to be completed this fall. Once this data has been obtained, it will be included in the EA. Due to additional data gathering resulting in Section 106 consultation, the project has been delayed.

Historic Preservation and the SH 402 Project

Section 106 of the National Historic Preservation Act of 1966 requires federal agencies to consider their effects on historic properties during project planning for any federal undertaking or permitted activity. SH 402 is a federal undertaking and as such must comply with this requirement. In addition, CDOT recognizes and values the history of our state.

Early in the SH 402 project development several historic properties were identified. Recent research has indicated tha t there are additional properties that must be identified and possibly avoided. A historic property is a general term for any building, structure, site, object, or district that is usually more than 50 years old. A team of historians and archaeologists is conducti g a more intensive survey of the entire SH 402 project corridor to identify historic properties and to find out if any of them are eligible for listing on the National Register of Historic Places. The State Office of Archeology and Historic Preservation has been working on the project with CDOT.

Section 4(f) of the US Department of Transportation Act of 1966 also identifies special efforts needed to preserve historic sites as well as park and recreation lands, wildlife and waterfowl refuges. At least one Section 4(f) property has been identified that will be impacted by the SH 402 project. The Section 4(f) process will require approximately six months of additional coordination and evaluation efforts. Both of these federal regulations (Section 106 and Section 4(f)) require that projects like SH 402 make every eff t to avoid historic sites. If avoidance isn't possible, it is necessary to minimize harm and mitigate impacts to there properties.CDOT is in the process of completing these analyses.

Next Steps*

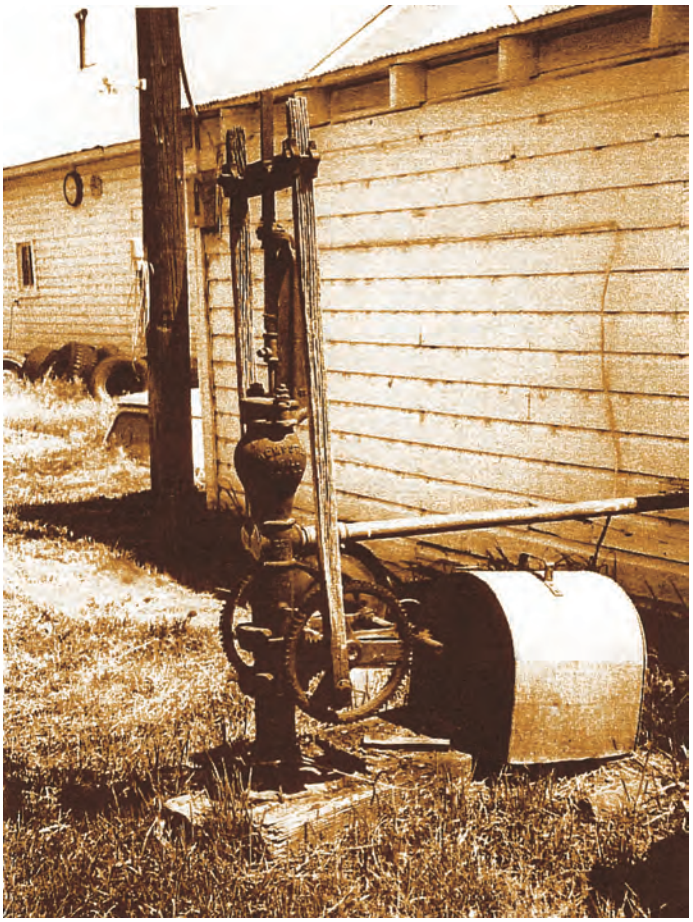
Additional data gathering related to historic properties
Fall 2005

Completion of Study & Release of Environmental Assessment for Public Review and Comment
Spring 2006

Public Hearing
Spring 2006

Decision will be made on whether to proceed with widening
Winter 2006

* Please note that the project schedule has been revised to include a full Section 4(F) Evaluation Process



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SH 402 Environmental Assessment

Historic preservation involves recognizing places from our past that are important to the American people, caring for them, and then using them in ways that enrich all of our lives. (Tandll, H. Ward, et al., A Heritage So Rich)

To learn more about historic preservation and its connection to the SH 402 Project, please look inside.

Alignment of the Meander Alternative

U.S. Department of Transportation Federal Highway Administration

DOT DEPARTMENT OF TRANSPORTATION

Please contact us if you have any questions or to be added to the mailing list.
Carol Parr • CDOT Region 4 • 970-350-2170 • Carol.Parr@dot.state.co.us
Michelle Li • J.F. Sato and Associates • 303-797-5039 • mli@jfsato.com

For a one-on-one meeting, please contact Dave Martinez, CDOT, (970) 667-4670 x5119. His office is conveniently located at 2207 SH 402.

www.sh402ea.com

Appendix D

Noise Analysis and Abatement Guidelines

COLORADO DEPARTMENT OF TRANSPORTATION

NOISE ANALYSIS AND ABATEMENT GUIDELINES

DECEMBER 1, 2002

COLORADO DEPARTMENT OF TRANSPORTATION

REGION 1	**AURORA**
REGION 2	**PUEBLO**
REGION 3	**GRAND JUNCTION**
REGION 4	**GREELEY**
REGION 5	**DURANGO**
REGION 6	**DENVER**
ENV. PROGRAMS (HQ)	**DENVER**

TABLE OF CONTENTS

1. Introduction

Pursuant to requirements set forth by the Federal Highway Administration (FHWA), the Colorado Department of Transportation (CDOT) Noise Analysis and Abatement Guidelines provide the procedural and technical requirements for the evaluation of highway project traffic noise and consideration of noise mitigation alternatives where noise impacts are identified. The resultant goal of these guidelines is to provide the citizens of the State of Colorado with as compatible a relationship as possible between highway improvements and noise sensitive land uses. CDOT understands the importance of the issue of highway traffic noise and is committed to evaluating traffic noise impacts during the planning, design, and construction of highways and transportation improvements.

The following guidelines are intended to provide a consistent, equitable approach in addressing highway traffic noise and to foster a rational abatement decision-making process for highway projects within the State of Colorado. In addition, the guidelines include the protocol for providing thorough documentation of these activities in technical noise study reports as a part of National Environmental Policy Act (NEPA) documents.

This document supersedes the February 1, 1995 *CDOT Noise Analysis and Abatement Guidelines* for all projects initiated on or after December 1, 2002. Projects initiated prior to December 1, 2002 will remain under the authority of the 1995 guidelines.

These guidelines are based on currently accepted practices and procedures used by Federal and state transportation agencies and will be subject to review every three years. Interim amendments to these guidelines will be made on an as needed basis and will be considered, when approved, to be an integral part of these guidelines. An addendum to these guidelines will subsequently be prepared to document the changes.

2. Applicability and Scope

2.1 Federal Requirements

The 1969 National Environmental Policy Act process provides broad authority and responsibility for evaluating and mitigating adverse environmental effects of transportation projects, including highway traffic noise, but it was not until the Federal-Aid Highway Act of 1970 that FHWA was mandated to develop noise standards for the mitigation of highway traffic noise.

The regulations that govern highway traffic noise for Federal-aid projects are contained in Part 772 of Title 23 of the Code of Federal Regulations (23CFR772). 23CFR772 describes the methods that must be followed in the evaluation and mitigation of highway traffic noise in Federal-aid highway projects. FHWA will not approve the plans and specifications for any federally aided highway project unless the project includes noise abatement measures that are deemed to be feasible

and reasonable to adequately reduce noise impacts. When warranted, noise mitigation is to be considered as an integral component of the total project development process and incorporated as such.

The FHWA document, *Highway Traffic Noise Analysis and Abatement: Policy and Guidance* (1995), calls for each state highway agency to prepare and adopt written guidelines specific to that state which must demonstrate compliance with 23CFR772. State highway agencies are allowed flexibility to establish their own definitions and quantifications of different criteria and decision items that are used in the guidelines to make noise abatement determinations. All highway projects that are developed in conformance with the CDOT guidelines will be deemed to be in conformance with the Federal regulations and with FHWA noise standards.

2.2 State Requirements

In addition to the Federal regulatory requirements, the CDOT guidelines are also required to be in accordance with CDOT Policy Directive 1601, Interchange Approval Process. The 1601 process applies to governmental and quasi-governmental (i.e. E-470, etc.) entity projects which require a new interchange on the system or major modifications to an existing interchange. Included in this process is the provision that potential environmental impacts must be evaluated, including those from projected traffic noise. This requirement broadens the general definition of Type I projects to include not only Federal-aid projects, but also state, local, and public-private partnership projects overseen by CDOT and requiring CDOT approval. The 1601 process also requires compliance with NEPA.

2.3 Project Classification

The following discussion describes which CDOT highway projects require a noise analysis:

2.3.1 Type I Projects

Under 23CFR772, it is mandatory for all states to comply with the regulations for projects that are classified as Type I projects. A Type I project is a project that consists of a **proposed Federal or Federal-aid highway project for the construction of a highway on a new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through traffic lanes.**

The CDOT guidelines are applicable to all Type I projects. Type I projects include, but are not limited to, the following activities:

- Addition of through-travel lane(s) to an existing highway.
- Addition to a highway of continuous acceleration/deceleration lanes that exceed 0.5 miles in total length. This requirement also applies to auxiliary and climbing lanes.

- Additions of new interchanges or alterations of existing interchanges.
- Addition of high-occupancy vehicle (HOV) lanes to existing highways.
- A project which consists of a change in vertical profile of 5 feet or more.
- Alteration of highways such that the horizontal distance between the nearest through centerline of travel and existing sensitive receivers is approximately halved.

In general, actions such as the above are considered to be Type I projects due to capacity increases or alignment changes. In all cases in which a project is identified as Type I, a noise analysis study is required if noise sensitive receivers are present within the project study zone. This study zone is defined as a 500-foot distance in all directions from the proposed edge of traveled way throughout the extents of the project. This 500-foot "halo" defines the extents for the noise analysis and shall include receivers on all sides of the highway.

2.3.2 Type II Projects

CDOT does not currently separately fund a Type II noise program, which is defined in 23CFR772 as projects that provide noise abatement on existing highways, essentially a "retrofit" noise barrier in a location where there will not be any new highway construction.

2.3.3 Other Projects

Additionally, a project that does not meet the Type I project definition must also undergo a noise analysis if there are noise sensitive receivers present and the project itself, through major alteration of the existing terrain, is expected to create a noise impact. An example of this would be a case where, to improve sight distance on a highway, an existing earth berm is flattened, resulting in a direct line-of-sight between the highway and an existing residence. These cases are extremely rare and shall be dealt with on a case-by-case basis.

2.3.4 Non-applicable Projects

Other than the example illustrated above, projects that do not meet the Type I project criteria are not required to undergo noise analysis. Projects and activities such as these include maintenance operations, minor safety improvements, resurfacing or whitetopping projects, and traffic-based operations such as modification of speed limits or traffic control devices.

2.4 Noise Sensitive Receivers

A noise sensitive receiver is any location where highway traffic noise may be detrimental to the enjoyment and functional use of the property. The primary consideration is normally residential areas, however, frequent human use areas such as schools, parks, hotels, and commercial centers are also considered for evaluation.

Normally, these properties are in existence at the time of the project construction, but special provisions apply to undeveloped lands if applicable.

2.4.1 Currently Developed Lands

All existing properties within the study zone are to be considered as existing receivers in the noise analysis. These properties must be classified as to the type of land use and the extent of the activity. As mentioned above, all receivers present within the defined study zone must be included in the analysis.

2.4.2 Planned, Designed, and Programmed Development

Normally, the noise analysis does not consider lands that are not developed, however, noise analysis is required for undeveloped lands for which development is "planned, designed, and programmed" at the time of the analysis (i.e., the noise analyses for the draft NEPA document [EA or draft EIS] and the final NEPA document [CE, FONSI, or final EIS],). This indicates that a definite commitment, with official public knowledge, has been made to develop the property in question and has reached a point where the developer's plans can no longer be changed in a practical manner. Any area which falls under this category must be dealt with in the noise analysis as though the development has already been constructed. The State of Colorado will consider a proposed development as being "planned, designed, and programmed" when a formal building permit has been issued to the developer by the local agency of authority.

2.5 Project Timing

Each state highway agency is required to identify when the public is officially notified of the adoption of a location of a proposed highway project. CDOT, within the scope of these guidelines, defines the "date of public knowledge" as the date in which the final environmental project document (Categorical Exclusion, Finding of No Significant Impact, or Record of Decision) is approved. After this date, CDOT will be responsible for analyzing changes in traffic noise impacts, but will not be required to provide noise abatement for new development which occurs adjacent to the proposed highway project. Decisions concerning such noise abatement are left to the local government agencies and private developers. See Section 7.2 for further discussion concerning noise-compatible land use development.

3. Noise Fundamentals and Traffic Noise Impact Criteria

Sound can be defined as mechanical energy generated by movement or vibration from a source that can be sensed by the ear. Noise, generally, is defined simply as unwanted sound, and is the description usually given to sound that emanates from highway traffic. Each sound (noise) can be expressed in terms of three characteristics: magnitude, frequency, and time element.

The magnitude of a sound event can be measured in terms of its acoustic pressure. Since the range of absolute pressure values can vary over several orders of magnitude, the unit

typically used to describe sound levels is the decibel (dB), which is a relation of the sound pressure level to a standard reference pressure. This ratio is then converted to a more compact logarithmic scale.

Since sound travels in waves, there are also varying frequencies associated with each sound event. The human ear does not respond equally to all frequencies, however, and filtering of these frequencies must be done in order to obtain accurate measurements and descriptions of highway traffic noise, as this noise is comprised of many frequencies. The filtering (weighting of frequencies) of the "A" scale on sound-level meters most closely approximates the average frequency response of the human ear, and is the scale that is used for traffic noise analyses. Decibel units described in this manner are referred to as "A-weighted decibels", or "dBA".

As sound intensity tends to fluctuate with time, a method is required to describe a noise source, such as a highway, in a steady state condition. The descriptor most commonly used in environmental noise analysis is the equivalent steady state sound level, or L_{eq}. This value is representative of the same amount of acoustic energy that is contained in a time-varying sound measurement over a specified period. If that time period is one hour, the value then reflects the hourly equivalent sound level, or $L_{eq}(h)$.

For highway projects that require noise analyses in Colorado, the accepted noise descriptor is the worst-hour $L_{eq}(h)$ for determining existing and future noise levels and impacts. The worst-hour is specified and defined as such to reflect the conditions that will produce the worst traffic noise. In general, this is highest traffic volume traveling at the highest possible speed and reflects Level of Service (LOS) C conditions. If traffic volume continues to increase past these conditions, the traffic is forced to slow down, which in turn decreases the noise levels generated.

A traffic noise impact is considered to occur when any noise sensitive receiver is subjected to either 1) existing or future noise levels that approach or exceed the noise abatement criteria (NAC), or 2) future noise levels that substantially exceed the existing noise levels. Both of the above must be analyzed to adequately assess the noise impact of a proposed project.

When noise sensitive receivers are present and are found, during the course of the analysis, to be impacted under either case, noise mitigation must be considered and evaluated for those receivers under the feasibility and reasonableness factors.

3.1 Approach or Exceed Noise Abatement Criteria

The noise abatement criteria (NAC) are noise levels which are compared to existing or future levels to determine absolute impact. The levels that are specified are based on the certain types of existing activities that are present.

CDOT defines "approach" as noise levels that are 1 dBA less than the NAC specified in 23CFR772. The values shown in Table 1 reflect the values that CDOT considers when evaluating noise levels for each corresponding land use category.

Any receiver that is subjected to noise levels that either currently reach or are predicted to reach the values stated on Table 1 are considered to be impacted by noise. It is important to note that these values do not have to be exceeded to result in an impact, and there is no difference in the severity of the impacts in either case.

Table 1
CDOT Noise Abatement Criteria (NAC)
Based on FHWA Noise Abatement Criteria, 23CFR772

Category	L_{eq}(h), dBA*	Description of Activity Category
A	**56 (Exterior)**	Lands on which **serenity and quiet** are of extraordinary significance and serve an important **public** need and where preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	**66 (Exterior)**	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	**71 (Exterior)**	Developed lands, properties, or activities not included in Categories A or B above
D	**--**	Undeveloped Lands
E	**51 (Interior)**	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

*Hourly A-Weighted Sound Level in Decibels, Reflecting a 1 dBA "Approach" Value Below 23CFR772 Values

The above criteria strikes a balance between noise levels that are desirable and those that are feasible. Numerous approaches were considered in establishing the criteria, to include hearing impairment, annoyance, sleep interference, and speech communication interference. Highway traffic noise levels do not normally reach the levels that result in hearing damage, and what constitutes an "annoyance" or hindrance to sleep is very difficult to quantify on a large scale. Speech impairment, however, was usefully applied as a condition that reflects a compromise between noise levels that are desirable and those that are achievable and was found not to be arbitrary or capricious.

It is very important to understand that the above noise levels are impact criteria only; the absolute threshold levels for which mitigation consideration must take place. There is not a specific absolute noise level that must be mitigated to. When evaluating mitigation, the NAC values are not to be considered as desirable levels for which mitigation must be designed. The overall goal of mitigation is to obtain a substantial noise reduction, which may or may not result in noise levels below the NAC levels.

Most sensitive receivers that will be encountered on highway traffic noise analysis efforts will be categorized as category "B" receivers and are subject to the 66 dBA approach criterion. Category "C" receivers include most commercial and industrial areas, and category "D" describes lands that are undeveloped and development is not planned, designed, and programmed. Category "D" receivers are not subject to an NAC value.

Classification of category "A" receivers should be extremely rare and apply only to extraordinary special public needs where the existing environment is of a serene nature that needs to be preserved to allow the area to continue to serve its purpose. Determination of whether or not a specific receiver qualifies as a category "A" will be made on a case-by-case basis.

When determining impacts, primary consideration is to be given to exterior areas of frequent human use where a lowered noise level will be of benefit. In those cases where there are no exterior activities to be affected by highway traffic noise or where exterior activities are far from or physically shielded from the roadway in a manner that prevents an impact on exterior activities, the interior criterion (category "E") may be used. CDOT will consider interior noise abatement only for severe traffic noise impacts (see Section 5.6) or public-use or non-profit institutional structures (see Section 5.7).

3.2 Substantial Increase over Existing Noise Levels

The second manner in which a noise sensitive receiver can be impacted by highway traffic noise is to be subjected to a substantial increase of the existing noise environment due to a highway project.

CDOT defines that a noise impact occurs if a receiver is to receive an increase in noise levels of at least 10 dBA. This impact criterion takes effect regardless of the absolute noise levels. For example, an increase of noise from 45 to 57 dBA for a category "B" receiver will result in a noise impact, as the noise increase of 12 dBA is greater than the 10 dBA threshold.

A change in noise levels from 62 to 69 dBA would not be an impact under the substantial increase criteria, but would still result in an impact as the approach criteria has been met.

As long as one of the impact criteria is met for a receiver, mitigation must be considered for that receiver. No subjective descriptor terms are used to describe traffic noise impacts, with the exception of a "severe" impact, which is described below.

3.3 Severe Traffic Noise Impacts

A severe noise impact is defined to occur when a receiver is either exposed to absolute exterior noise levels of 75 dBA or greater, or a projected increase of 30 dBA or more over the existing noise levels. Situations such as these are reflective of a condition in which receivers are affected by highway traffic noise to a much greater degree. Special provisions apply to the mitigation considerations for these receivers, which are described in section 5.6.

4. Highway Traffic Noise Analysis

The main purpose of the highway traffic noise analysis is to identify noise sensitive receivers that will be subjected to traffic noise impacts. Any and all receivers that are

identified as impacted must be considered for noise mitigation. The mitigation alternatives must be evaluated under the feasibility and reasonableness criteria. The noise analysis technical report serves as proof that the analysis was performed and provides all necessary documentation as required by the regulations.

As early as is reasonably possible in the process, an initial assessment must be made to determine as to whether or not the project will require a detailed noise analysis. This is best done in conjunction with the environmental scoping of the project.

The analysis consists of two major parts. The first consists of identification of noise sensitive receivers, assessment of the noise levels that these receivers are currently experiencing and are predicted to experience, and a determination of whether or not traffic noise impacts exist. If no traffic noise impacts are found, the analysis is then considered to be complete with no further evaluation required. If traffic noise impacts are expected, then the second part of the analysis, mitigation consideration and evaluation, must be performed. The requirements for the first part of the analysis will be described below, while the mitigation consideration protocol will be discussed in section 5.

Common misunderstandings arise when the subject and requirements of performing noise analyses are discussed. The requirement to perform a noise analysis, in and of itself, does not imply that any other future actions are inevitable. The analysis will identify any noise impacts, which will then be considered for noise mitigation. Noise mitigation will be provided if it is determined to be both feasible and reasonable.

4.1 Identification of Land Uses

The proper identification and quantification of the noise sensitive receivers adjacent to a highway improvement project is essential to the success of the analysis. Each receiver that is present within the extents of the project must be accounted for in accordance with the regulations.

Obviously, a project that does not border any existing or planned, designed, and programmed noise sensitive land use area will not require a noise analysis, nor will any receivers that are outside of the study zone (500 foot “halo” around the extents of work) for the individual project need to be considered.

In general, the primary consideration when considering the presence of noise sensitive receivers are the exterior areas of frequent human use that are adjacent to the individual properties. For single-family residential areas, the consideration point will be the outside area that is immediately facing the highway, which in most cases will be either the front or back yard or porch area. This also applies to special-use and non-residential areas, such as a park playground area or an outdoor restaurant seating area.

When first assessing the site for possible receivers, the different land use categories that are adjacent to the project must be identified. Sites directly adjacent to the highway are considered “first-row” receivers, and will be the main receivers of

interest in the noise analysis. This first row of receivers will be determined by drawing an imaginary line connecting each receiver with direct sight to the highway. Second- and third-row receivers, those which are directly beyond the first row, may also be determined as well, although this may not be necessary in all cases. Receivers beyond the third row are usually not considered, with possible exceptions being any receivers located along the end of a row, to evaluate the end areas of a potential barrier, or a receiver which is located beyond the second row where there are large gaps between structures in the first two rows.

To summarize the land-use activities that are present, list each type and number of receivers identified. This would include the number of existing or planned, designed, and programmed single-family residences, number of multi-family dwellings (i.e. apartment complex units), businesses, and if any other special use buildings or areas exist, such as parks, motels/hotels, or churches. These will be the areas that will be considered in the following phases of the analysis.

For noise modeling purposes in multi-family dwellings, each dwelling (unit) shall be considered as well as any common outdoor use areas. Areas above the ground level, however, are typically not feasible or reasonable to mitigate due to the inability to provide effective and reasonable noise mitigation at those locations. This is primarily due to the excessive barrier heights that will likely be required for mitigation.

4.2 Determination of Existing Noise Levels

The next step in the analysis is to quantify the existing noise environment by determining the noise levels that the identified receivers are currently experiencing. Determination of existing noise levels shall be made by field measurement and use of the Colorado version of the STAMINA 2.0 noise prediction model. Noise modeling of existing conditions is not possible and thus not performed in the case where the project involves the construction of a new highway in a new location, as there is no existing highway contribution to the noise environment.

4.2.1 Field Measurements and Model Validation

The purpose for taking field measurements is to gather data that is used to develop a comparison between those measurements and results obtained with the noise prediction model. This exercise is performed to validate the model so that it can be used with confidence to determine the worst-hour existing noise levels and predict the future noise levels.

Measurements can be taken at any time; however, it is best to measure when traffic is relatively free flowing at or near the posted speed limit. For high-volume roads, a 10-minute sample is usually statistically accurate enough to obtain a good measurement, but sample times of 30 minutes or more may be needed for measurements along lower volume roads. All measurement procedures must be performed in accordance with report FHWA-PD-96-046, Measurement of Highway Related Noise. It is not required to perform

measurements at any or each individual receiver, however, enough representative measurement locations in the project area must be utilized in order to reasonably characterize conditions for the validation effort. Once these data have been collected, each of the locations is then input into the model for comparison purposes.

In order to arrive at a valid comparison between measured and modeled results, traffic and speed data must be collected at the measurement locations at the same time the noise measurements were taken. This will involve actual counting of vehicles, being sure that truck (heavy and light) counts are taken separately, and a determination of the approximate speed that the vehicles were traveling. This speed can be determined by either driving a test vehicle through the traffic stream or by use of a radar gun. Once this data has been collected and normalized to an hourly basis, it is input into the computer model. The collection of relevant data will allow the modeling of the same conditions as was observed during the measurement exercise and does not require the analyst to attempt to measure during the "worst" noise hour. This effort is to be thoroughly documented within the noise study report.

The acceptable range between the actual noise measurements and the modeling results is 3 dBA. If the difference between the measured and predicted levels is not within 3 dBA, an examination of the measured and modeled data shall be performed to determine the reason for the difference. This may require that a second measurement be taken in some instances.

4.2.2 Noise Modeling for Existing Conditions

Unless the project involves the construction of a new highway on a new location, the worst-hour noise levels are determined by the validated computer model.

In selecting model locations, each individual receiver does not have to be modeled separately. A modeling location can be chosen that represents several actual receivers. This is acceptable as long as all the identified sensitive receivers are represented in the analysis. The number of the actual modeling points that are used will vary depending on the nuances of the individual project. For each modeled location, a table that shows the location identification and exactly how many receivers are being represented by that location must be included in the noise study report. These locations are then modeled at a height of 5 feet (1.5 meters) above the ground level elevation to approximate the height of the average human ear. For analysis of areas above the ground level, those locations shall be modeled at a height 5 feet above the elevation level of the use area.

To perform the noise modeling for the existing conditions, the following input data are required:

- Current roadway alignment for all roadways in the immediate area which may contribute to the noise environment.

- Existing traffic volumes, which include a breakdown of numbers of automobiles, medium trucks (2-axle, 6-tire), and heavy trucks (3+ axles) for all roadways.
- Current posted speed limit for all roadways.
- Alpha factors for ground attenuation affects (0.0 for hard ground, 0.5 for soft ground).
- Receiver locations.
- Terrain features, such as natural berms.
- Other features which result in a shielding effect (i.e. buildings).
- Any existing noise barriers present.

To model the worst hour existing condition, the traffic data that shall be used is the highest volume of traffic that can travel at the highest possible speed for the particular roadway, reflecting LOS "C" conditions. This is normally the Design Hour Volume (DHV) of the roadway modeled at the posted speed limit. If the projected traffic volume is less than the LOS "C" volume, those lesser volumes are to be used. Proper documentation of the source of the traffic volumes is required to be included in the noise study.

To provide for a detailed and thorough review of all noise modeling efforts, to include those done to predict the future noise levels as described in section 4.3, the noise study must either include a disk with an electronic copy of the data files or a computer printout of all data generated during the modeling analysis.

4.2.3 Locations With Existing Noise Barriers and Privacy Fences

The situation in which a noise barrier is currently present can create confusion. If a barrier is currently in place, the existing noise model, in order to reflect the existing noise environment, must be made with the barrier in place. This, however, must be a solid barrier designed specifically to abate noise. The noise levels that are then used to depict the existing conditions are those that are generated through the noise analysis with the barrier location included in the model.

Wooden privacy fences, which are not normally constructed to abate noise, are not to be modeled as noise barriers, since they generally do not provide an appreciable amount of noise reduction. These fences cannot normally be considered as noise barriers in that they contain many gaps, each of which results in additional transmission of noise, and are not sufficiently dense to provide negligible noise transmission through them.

When considerations for privacy and other development-related fences are made, consideration shall be given as to whether or not the fence will remain in good condition over the life of the project (20 years for projected future noise levels). If there is a question as to the durability of the fence, it should not be used.

4.3 Prediction of Future Noise Levels

Once the existing noise levels have been determined, the future design-year noise levels for each receiver are calculated. The future model shall reflect conditions 20 years into the future (traffic counts and speeds, roadway alignments, changes to terrain) for the worst-hour noise condition and should include all alternative alignments being considered for the project, to include the "no-action" alternative. For minor projects, there will likely only be one alternative, but in the cases of projects which are either part of an EA or EIS, there may be several alternatives to consider and for which to provide analysis.

The traffic projections that are used must be consistent with the applicable adopted long-range plan traffic model, if available. When a long-range plan traffic study is not available, the best available data shall be used. The traffic volumes used shall be the 20-year design volume at the design speed reflecting up to LOS "C" conditions for the new highway design (similar to the procedure used for modeling existing traffic conditions as per section 4.2.2).

The same traffic noise prediction model that was used in the determination of the existing conditions shall also be used for the future model, with the modeled receivers in the same locations as they were for the existing model, as appropriate. Receivers which are identified as potential ROW takes will not normally need to be included in the future modeling, but do need to be included in the "no-action" case. As was the case in the existing condition evaluation, if a noise barrier is currently present it must also be included in the analysis of the future conditions.

4.4 Determination of Traffic Noise Impacts

The final step in the first part of the noise study is to compare the future predicted noise levels to the applicable noise abatement criteria and to the existing noise levels to determine traffic noise impacts. As discussed earlier, any receiver which either approaches or exceeds the noise abatement criteria under the existing or future conditions or is subjected to a substantial increase in noise levels is considered to be impacted by highway traffic noise. This is to be done for each alternative, including the no-action alternative.

It is important to remember that the determination of traffic impacts only results in consideration of mitigation, which will be performed in the next part of the analysis. It is not a guarantee that mitigation will be provided.

If no traffic noise impacts are identified under the future conditions for any of the proposed alternatives, as defined by the provisions set in these guidelines, the analysis is considered complete and further consideration of mitigation is not required. This determination, if applicable, shall be stated as such in the final noise study report.

5. Evaluation of Highway Traffic Noise Abatement

Any and all receivers which were determined to be impacted in the analysis are evaluated for traffic noise mitigation. This requires that the overall social, economic, and environmental effects of the mitigation be evaluated against the benefits. When determining abatement measures, primary consideration is to be given to exterior areas surrounding residential areas or areas of frequent human use for other uses such as parks and commercial districts where a reduced noise level would be of benefit. All feasible and reasonable mitigation measures are required to be included in the highway project.

It is required that any potential noise abatement measure under consideration is one that provides a substantial reduction of noise levels. This, at the absolute minimum, is a noise reduction of no less than 5 decibels for at least one receiver. It is not considered to be a prudent investment of public funds to consider construction of a noise barrier that will not result in at least a readily perceptible noise reduction.

5.1 Mitigation Options

The following are mitigation measures that may be incorporated in highway projects to reduce traffic noise impacts. Each of these shall be considered and discussed in the noise study report.

- Traffic management measures, such as lane-use restrictions, designated truck routes, and speed limit reductions. Measures such as these may or may not be beneficial or possible given the constraints of the project and the immediate area. While lesser speeds do decrease noise levels, it generally will take a reduction of speed of approximately 20 miles per hour to achieve a readily perceptible (5 dBA) reduction of noise at its source.
- Alteration of horizontal and vertical alignments to reduce noise impacts, where practical.
- Acquisition of undeveloped land for buffer zone creation. While buffer zones are a very good strategy in overall noise compatible land use planning, it is often not a practical solution, due to the high amount of land that must be purchased. In many instances, the existing developments already border the highway.
- Noise insulation of public use or non-profit institutional structures only; private residences may be considered for such abatement only if a severe noise impact exists (see Sections 5.6 and 5.7).
- Construction of noise barriers within highway right-of-way, or acquisition of property rights for construction of noise barriers outside of the highway right-of-way.

Vegetation and pavement are often discussed in regards to noise abatement but are not measures that can be normally be used in lieu of other noise abatement measures:

- Vegetation is only potentially viable as a noise abatement measure if it is 100-200 feet wide, at least 16 feet tall (when considering ground level receivers), and sufficiently dense so that it cannot be seen through. If these conditions can be met, a noise reduction of up to 5 decibels is possible. Vegetation can definitely be of an aesthetic and psychological benefit, and if it is provided it must be made clear that, if it does not meet the above criteria for noise abatement, that it is being provided for visual, privacy, or aesthetic treatment only.
- A topic that has been researched for many years has focused on attempting to reduce the noise emissions that are due to the tire/pavement interaction. While it is accepted that different tires, pavements, and pavement surfacing textures do result in varying noise levels, it is difficult to forecast the overall pavement surface condition 20 years into the future. Due to this fact, and the requirement that noise mitigation must provide a "readily perceptible" reduction in noise levels over a long period of time, the use of different pavement types or surface textures cannot be considered as a noise abatement measure.

5.2 Noise Barriers

The most common noise mitigation measure is the noise barrier, a solid physical structure constructed between the highway and noise sensitive receivers. The barrier works by blocking the path of sound waves from the highway, forcing the sound to travel around or over the barrier. If a noise barrier is tall enough to break the line-of-sight between the highway and the receiver, constructed of sufficiently dense material (4 pounds per square foot minimum density), and does not have any openings or gaps, a noise reduction will be possible that will range from being readily perceptible to less than half as loud (5-15 decibels for most barriers) depending on the height and location of the barrier. **A barrier design must achieve at least a readily perceptible noise reduction (5 decibels) to be considered feasible for construction as a prudent investment of public funds.**

The most common types of noise barriers are earth berms, which is essentially a large natural or man-made earthen mound, and vertical walls, which can be constructed out of a variety of materials, most commonly concrete or masonry block. Berms, while more natural in appearance, do require a great deal of land and a very large footprint. Noise walls require much less space to be constructed, but may be subject to height limits due to structural and aesthetic reasons. Barriers have also been constructed by placing walls on top of berms to create a combination barrier.

More detailed information concerning design, structural, and aesthetic considerations of noise barrier construction at CDOT can be found in the *Noise Guide for Highways*, Volume IX of the *CDOT Design Guide,* August 1996.

5.3 Noise Barrier Acoustical Evaluation

Evaluations of possible noise barriers are to be done using the STAMINA 2.0 model (Colorado version) using the future conditions data. Various locations and

heights of barriers can be input into the model, which will calculate the noise levels with the barrier. The amount of reduction, also known as insertion loss, is defined as the future barrier noise levels subtracted from the future no-barrier condition.

Acoustically, the most effective noise barriers are generally located closest to the source (i.e. highway) or to the receivers. As a result, initial barrier placement should be considered and evaluated for either of these locations. In many cases, however, the CDOT right-of-way line is the best practical location for the barrier. Each possible barrier location shall be considered in the analysis if more than one possible location can be used.

Also to be considered are certain issues such as overall length of barrier, different heights, and compensation for situations that require breaks in the barrier (overlapping barriers). Performing this evaluation is an iterative process, done by altering certain inputs. The best judgment of the noise analyst should be used in all cases to determine which solution is recommended, but more than one option shall always be evaluated to ensure that nothing was missed during the analysis. As always, this process needs to be documented in the noise analysis report.

In a case where a legitimate noise barrier is already present, the first evaluation that needs to be made is what alterations can be done to the existing barrier to provide an additional substantial reduction of noise levels over what the barrier is already providing, if necessary. This option will then need to be evaluated under the feasibility and reasonableness guidelines. If the current barrier is still able to function properly as a noise barrier, as will likely be the case for a concrete or masonry barrier, it will not likely be feasible or reasonable to achieve an additional substantial noise reduction. If, however, the existing barrier poses functionality or maintenance problems, it can be replaced in-kind as a part of the Type I highway project. Cases such as these are common where older, wooden noise barriers have been installed. Decisions concerning these situations will be made on a case-by-case basis.

As noise mitigation measures other than the construction of noise barriers are not usually practical, the following discussions concerning feasibility and reasonableness are presented in the context of considering noise barriers and noise barrier construction.

5.4 Feasibility

Feasibility deals with physical considerations and concerns with the construction of an acoustically effective noise barrier at a particular site and project.

5.4.1 Noise Reduction

The major feasibility criterion that is to be considered is to whether or not a substantial noise reduction can be obtained based on constraints that are inherent to the individual project. If a substantial reduction cannot be provided a noise barrier is not feasible and will not be recommended for inclusion in the project.

CDOT defines a substantial reduction goal as a barrier that is predicted to reduce noise levels to at least one adjacent front row receiver by at least 10 dBA. The initial barrier evaluation shall be performed to determine what will be required to achieve a 10 dBA reduction. If the barrier's height that is required for this reduction is found to be 25 feet or greater, then it can be considered not feasible and the barrier evaluation will take place at a lower height. Each barrier that is evaluated shall also be evaluated under the reasonableness criteria.

It is desired that barriers be optimized in terms of overall reduction (height) and cost-benefit, which is one of the factors for reasonableness. In this case, it is desired that a point be identified where a potential noise barrier provides the best balance between cost and benefit. This is not a trivial task, as the benefit versus cost relationship is not linear and a point of diminishing returns will be reached. An iterative process, however, can result in a barrier that will be optimal within the scope of the reduction goal (10 dBA or greater), and the minimum reduction required (5 dBA). **In any case, no barrier shall be deemed feasible if an absolute minimum reduction of 5 dBA cannot be achieved for at least one front-row receiver.**

A benefited receiver is one, impacted or not, which receives at least 3 dBA of noise reduction, corresponding to at least a perceptible benefit. This is reduction that is based on the addition of the noise barrier only, which is only considered after any shielding affects, such as for rows of buildings, are taken into account.

The overall noise environment should also be considered in whether or not a noise barrier will be feasible. If the area in question is one where aircraft or rail activity exists, a barrier that only mitigates highway noise might not be enough to reduce the overall background levels appreciably. In those cases, it would not normally be feasible to construct a highway traffic noise barrier. Other considerations that need to be taken into account are situations where a barrier will shield a main highway, but not a frontage road. In these cases, the overall noise environment shall be the basis for the determination if a substantial noise reduction is possible, not just the reduction to the mitigated source.

5.4.2 Safety and Maintenance Considerations

As is the case with any structure, there are obvious engineering, safety and maintenance issues that must be considered to determine its constructability, and thus, be a feasible proposition. If any of these issues are significant enough to cause a fatal flaw condition, then the barrier can be deemed not feasible. Examples of situations which can be considered fatal flaws include, but are not limited to, the following:

- Excessive reduction of sight distance.
- Creation of a continuous shadowing condition that may cause excessive icing of driving lanes through the winter months.

- Inability to provide for adequate snow/debris removal.

5.4.3 Constructability

If reliable and common engineering practices could be employed to construct a noise barrier, then that barrier is considered to be a feasible proposition. Other factors that are sometimes considered concurrently, such as costs, are to be evaluated separately under the reasonableness criteria described in section 5.5.

If it is obvious that the constructability of a noise barrier due to site limitations or engineering considerations is not possible without major modifications to the site or technological efforts, the barrier can be considered not to be feasible and no further analysis is required, however, this should only be used for situations that are very clear. If it may be possible that a barrier(s) can be constructed, the evaluation with the computer model will take place in order to determine if a substantial reduction can take place. Decisions such as these shall be thoroughly documented and justified in the noise study report.

A very common issue to consider in this case is the ability to construct a continuous barrier for the entire length of the impacted area. An effective noise barrier cannot be built if breaks for driveways, sidewalks, streets, utilities, drainage facilities or streams are needed, as these breaks drastically reduce the barrier's performance. One possible solution in a case such as this is to consider overlapping the barriers.

5.4.4 Berms

Most of the above feasibility discussions have focused on the construction of noise barrier walls. Berms, however, can be considered as an alternative to walls where possible, as they are generally more aesthetically pleasing and have a more natural appearance. Limitations with berms do need to be considered in the feasibility evaluation, as they do require a much larger footprint. Ideally, this will be enough of a footprint to provide no steeper than a 3:1 slope.

5.4.5 Considerations for Parallel Barriers

Due to multiple sound reflections, performance degradation of parallel barriers needs to be investigated if the width-to-height ratio is less than 10:1 (distance between the barriers is less than 10 times the height of the barriers) or if the barriers are closer together than 200 feet. In these cases, if it is found that the overall noise reduction has decreased, steps need to be taken to reduce this degradation. Possible solutions include raising the height of the barriers to overcome the degradation or investigating the use of absorptive treatments on either or both barriers to reduce the reflections. In these cases, retaining walls, if they are present, should be treated as barriers in the analysis.

If all noise barriers that have been evaluated for a particular project are deemed not to be feasible (i.e. no barrier can be constructed that will result in a 5 dBA reduction to at least one receiver), the reasonableness criteria are not assessed and the noise

analysis is considered complete. This decision is to be discussed and documented in the noise study report.

5.5 Reasonableness

The reasonableness determination is a more subjective process than what is done to determine feasibility. It implies that common sense and good judgment have been used in the consideration of noise abatement. The process for evaluating the reasonableness of abatement is meant to be flexible enough to meet individual situations but able to be applied in as consistent and uniform a manner as possible on a statewide basis. The main consideration in this evaluation is whether or not the barrier is a practical solution for a certain situation.

The FHWA regulations are meant to give the states flexibility in complying with the requirements of 23CFR772, and many of the criteria that are to be considered are based on a range of possible solutions, many of which are to be determined by the individual states. While the determination of impacts is fairly standard and must be done by all states, the evaluation of any potential mitigation does not contain any mandates as to when mitigation is to be provided, other than after a determination of feasibility and reasonableness. In this determination, there is only one "absolute" criterion that is considered by CDOT in these guidelines: Even if a barrier meets all feasibility requirements and is deemed to be reasonable, it will not be built if the majority of the affected property owners do not want it to be built. A property is considered to be "affected" if it is predicted to receive at least a 3 dBA benefit from the barrier (i.e. is considered to be a "benefited" receiver).

The final determination of reasonableness of noise mitigation will be made only after a careful and thorough consideration of a wide range of criteria. The following are the criteria that will be considered by CDOT in its noise abatement evaluation. **None of the following reasonableness factors by itself shall be sole grounds for acceptance or rejection of mitigation.**

Each reasonableness factor discussed below will have one of four possible values:

- EXTREMELY REASONABLE – The proposed mitigation can be accomplished through minimal financial or social costs, or reflects a situation which warrants high consideration for mitigation.
- REASONABLE – The proposed mitigation can be accomplished through acceptable financial or social costs, or reflects a situation which warrants greater consideration for mitigation.
- MARGINALLY REASONABLE – The proposed mitigation can be accomplished through moderate financial or social costs, or reflects a situation that is moderately warranted for mitigation consideration.
- UNREASONABLE – The proposed mitigation cannot be accomplished without excessive financial or social costs, or reflects a situation in which mitigation consideration should be minimal at best.

5.5.1 Cost Benefit Index

In consideration of the cost of each potential noise barrier segment, the barrier benefit index shall be evaluated based on an estimate of cost per receiver per decibel of reduction. This will determine the "cost-reasonableness" of the abatement.

The cost benefit index, calculated as a ratio, is not intended to function as an accurate itemization of all of the different costs that are prevalent in the construction of a noise barrier, but rather to determine a consistent level of consideration that will be used for all CDOT noise abatement evaluations under these guidelines.

EXTREMELY REASONABLE: Less than $3000/receiver/decibel
REASONABLE: $3000-$3750/receiver/decibel
MARGINALLY REASONABLE: $3750-$4000/receiver/decibel
UNREASONABLE: More than $4000/receiver/decibel

This value will be determined by dividing the approximate cost of the barrier (length * height * unit cost) by the total decibel reduction that is predicted to occur. For evaluation purposes, the unit cost that will be used for this cost calculation will be a typical cost of $30 per exposed square foot, which will approximate all costs in construction of a standard concrete/masonry barrier that does not require special site considerations. If berms are possible and are potentially feasible, use the unit cost of $10 per square yard of earth for the berm portion of the calculation.

The total decibel reduction is the cumulative sum of all of the decibel reductions projected for each receiver that receives at least a 3 dBA benefit directly due to the noise barrier (all benefited or affected receivers).

For example, consider a barrier 10 feet high and 1000 feet long to protect a development of 16 homes. If 6 receivers are predicted to receive a 5 dBA benefit and 10 are predicted to receive a 7 dBA benefit, the cost benefit index value will be calculated as follows:

Cost = (10 ft. ht.) * (1000 ft. l.) * ($30/sq. ft) = $300000;
Benefit = (6 rec. * 5 dBA) + (10 rec. * 7 dBA) = 100 total dBA reduction;
Cost-Reasonableness Value = $300000/100 dBA = $3000/receiver/decibel.

This barrier would be considered REASONABLE.

As mentioned earlier, receiver points that were used in the modeling usually represent several actual receivers. It is very important to properly quantify these receivers to obtain an accurate count of the benefits achieved to be used for the

calculation. For the calculation, each benefited individual residence, business, etc. is to be counted as one receiver. For multi-family residences, each unit adjacent to the highway should count as one receiver. If the multi-family structure is predicted to receive an overall benefit of 8 dBA, for example, but there are 4 separate units, then an overall benefit of 32 dBA (4*8) must be used in the calculation.

In many cases, the number of receivers and their locations are not easily defined. The noise analyst in this case must use good judgment in determining these values, with the overall social benefit being the primary consideration in this evaluation. Special use facilities, such as parks and churches, should be handled with the same consideration and judgment on a case-by-case basis.

5.5.2 Build Noise Level

The future projected noise levels with the completion of the project should, on average, be at least 66 dBA for consideration of noise mitigation for the front row receivers.

EXTREMELY REASONABLE: Design-year noise levels 70 dBA or more
REASONABLE: Noise levels of 66-70 dBA
MARGINALLY REASONABLE: Noise levels 63-66 dBA
UNREASONABLE: Levels less than 63 dBA

This criterion gives greater consideration to areas which are or will be subjected to a higher absolute level of noise.

5.5.3 Impacted Persons' Desires

The opinions and desires of the impacted community should be of primary importance in the evaluation of reasonableness of a noise barrier. At least 50% of the affected property owners should want the noise barrier.

EXTREMELY REASONABLE: More than 75% in support
REASONABLE: 50-75% supportive
MARGINALLY REASONABLE: 25-50% supportive
UNREASONABLE: Less than 25% supportive

These values are normally based on residential areas, as normally mitigation for commercial and special-use areas by themselves are not reasonable. The percentages are to be based on the properties that benefit from the noise barrier (i.e. receive at least a 3 dBA benefit). In all cases, each individual property owner or their official designee or representative shall be the party to be consulted in this manner.

5.5.4 Development Type

The mixture of development types plays a major role in determining the reasonableness of mitigation. To be considered, the amount of residential

development should be at least 75% of the overall development in the area around the project.

EXTREMELY REASONABLE: Greater than 75% residential
REASONABLE: 50-75% residential
MARGINALLY REASONABLE: 25-50% residential
UNREASONABLE: Less than 25% residential

In general, the term "residential" as described above also includes other category "B" type development, such as parks, churches, hospitals, hotels, etc.

5.5.5 Development Existence

To be fully considered for a reasonable project, the majority of the development in the area of a highway improvement should have been in existence for at least 15 years before the consideration of the project.

EXTREMELY REASONABLE: Greater than 75% of properties at least 15 years old
REASONABLE: 50-75% at least 15 years old
MARGINALLY REASONABLE: 25-50% at least 15 years old
UNREASONABLE: Less than 25% at least 15 years old

The spirit of this criterion is to give greater consideration to long-term residents.

5.5.6 Build Noise Level vs. Existing Noise Level

The future build noise levels over the existing levels will be more of an issue if there is to be a readily perceptible increase with the completion of the project.

EXTREMELY REASONABLE: Greater than a 10 dBA increase
REASONABLE: 5-10 dBA increase
MARGINALLY REASONABLE: 0-5 dBA increase
UNREASONABLE: A project that will result in a decrease in projected noise levels.

This criterion allows greater consideration for projects that receive a perceptible increase in noise levels. In any case, this criterion is to still give consideration and not dismiss a potential barrier just because the project is not contributing any additional noise, especially if the overall noise levels are projected to be very high (70 dBA or greater).

Upon review of these criteria, the decision that is made should be well documented in the noise study report. To aid in this documentation, completion of CDOT form 1209 is required and is to be included within the noise study report (see Appendix C for a copy of the form). This form is to be filled out for each barrier segment or each distinct area of the project that were evaluated in the analysis.

5.6 Special Considerations for Severe Impacts

If a private-use residential property is determined to be severely impacted by noise (75 dBA exterior levels or a 30 dBA or more increase in noise levels), then extra-ordinary abatement measures may be considered if no other possible abatement is determined to be feasible and reasonable. One such method that can be used in these cases is noise insulation of the structure, which can include such measures as sealing windows and doors, filling voids in the structure, installation of an air-conditioning system, or other use of noise-absorbing material.

The consideration of extraordinary abatement measures in the case of severe highway traffic noise impacts can be made on a case-by-case basis and is not a mandatory requirement at this time.

5.7 Special Considerations for Non-Profits

Public use or nonprofit institutional structures, such as churches and schools, may be considered for noise insulation in accordance with 23CFR772.13.c(6). This evaluation is strictly voluntary and can be made on a case-by-case basis. Care must be taken in this evaluation as to the condition of the structure, its current amenities, and overall use characteristics to be sure that any proposals consider fully the implications of providing the abatement. One such case is for a facility which is not subjected to high interior noise levels unless the windows are open, but must remain open for the purposes of ventilation, and thus, provide proper use and enjoyment of the facility. Any decisions in this regard must be thoroughly and completely documented in the text of the noise report.

6. Construction Considerations

The approach to this discussion should be general in scope and consider the temporary nature of construction activities. Included should be the types of activities that are expected to be performed and the equipment that will be used. If desired, noise levels that are associated with these activities can be researched through product or process literature and presented in the report. Computerized prediction models have been developed for the calculation of noise from construction but are very sophisticated and require a great deal of input. As a result, use of these models to analyze construction noise is not required.

6.1 Noise

No detailed analysis or mitigation measures are required, but the noise analysis should at least identify low-cost, common sense mitigation measures that can be included on the project. Examples are limitations of work to daytime (or specified) hours, ensuring that equipment utilized properly maintained mufflers, modification of backup alarm systems, location of haul roads, and public outreach. This may be more of an issue when dealing with large, complex projects in major urban areas. In these cases, a more detailed discussion of the impacts and mitigation measures is necessary.

6.2 Vibration

A vibration analysis is generally not necessary for construction activities unless there are vibration-sensitive businesses in the area. Before construction begins, each vibration-sensitive area must be identified and a temporary vibration mitigation plan be developed.

6.3 Local Ordinances

Some entities have passed local noise ordinances which may restrict the amount of noise that can be emitted from a construction operation during certain hours or in certain areas (i.e. residential neighborhoods). In all cases, these noise ordinances must be obeyed unless a variance has been requested from and approved by the local agency of authority. This is something that may be needed if the work is envisioned to be very extensive or lengthy in nature.

7. Community Considerations

7.1 Public Involvement

Decisions concerning noise abatement should include involvement from the public, in particular the citizens who reside or perform business adjacent to the proposed noise barrier. For every project that a noise barrier is recommended, the affected residents' input shall be solicited. The affected residents include everyone who is shown, through the noise analysis, to receive a noise reduction from the proposed barrier. This will almost always include all first row property owners, and may include those in the second and third rows as well. These are the opinions that must be given the most consideration, but all members of the community at large should be able to provide their input as well.

Education should also be provided to members of the general public within the scope of public meetings and publications that describe noise, noise-related impacts, traffic noise mitigation, and enforcement issues. Various publications are available on the FHWA web site (http://www.fhwa.dot.gov/environment/noise.htm) that explain many of these concepts.

7.2 Coordination with Local Agencies

Upon completion of the noise study technical report, information shall be provided to local government agencies within whose jurisdiction the highway project is located as to the implications of the project on that particular local community in the future. The overall goal of this effort will be to prevent future traffic noise impacts on currently undeveloped lands and to attempt to promote noise compatible land use planning.

Proper noise compatible land use planning is very likely the best approach in dealing with the issue of highway traffic noise. The premise is very simple: Refrain from placing noise sensitive developments adjacent to highways. In reality, this is very difficult to do. As the jurisdiction over most of the land in these cases

belongs to local governments, it is up to them to determine what activities to pursue in consideration of the best interests of their citizens. While the State of Colorado encourages local governments to plan their developments in such a manner to minimize the impacts of highway traffic noise, such as the creation of buffer zones or placing less sensitive developments such as office buildings near the highway, there are no mandates currently in effect that prohibit noise sensitive development adjacent to highways.

Information shall be provided to the local officials as to the best estimation of future noise levels at various distances away from the centerline of the project for both un-developed and developed lands. In particular, the distance estimate of the projected 66 dBA contour (category "B" approach criterion) should be emphasized. The noise study report should be forwarded to the local authorities, as well as any other explanation or information that will aid the local officials in planning for future traffic noise impacts, such as the FHWA publications "The Audible Landscape: A Manual for Highway Noise and Land Use" and "Guidelines for Considering Noise in Land Use Planning and Control". Upon request, CDOT will provide additional available material and technical support and guidance which may be of assistance.

8. NEPA Documentation Requirements

For each and every Type I project, regardless of which level of documentation (CE, EA, EIS) is being used for that particular project, a detailed noise study report will be required to be submitted for CDOT review and comment. This finalized report will be submitted and included with all project information and documentation.

8.1 Categorical Exclusions

For Categorical Exclusion projects, there is usually no published environmental document. Rather, CDOT Form 128 is used to document the environmental clearances, to include noise. Completion of the detailed noise technical report, which has addressed the comments and concerns of the CDOT environmental review process, will suffice as far as project clearance documentation is concerned. The date that the noise analysis has been accepted will be noted on the 128.

8.2 Environmental Assessments and Environmental Impact Statements

Environmental Assessments and Environmental Impact Statements, within the body of the document, will provide a summary of the noise technical report. In particular, this summary will include the impacts that are expected and an evaluation of any potential mitigation measures. Although at the early stages of the environmental analysis and documentation effort final design information is not available, every effort must be made to make an initial determination of impacts and evaluation of mitigation measures, even if final decisions will not be made until the design process for the project.

Before the adoption of the final Environmental Impact Statement or Finding of No Significant Impact, noise abatement measures which are reasonable and feasible and are likely to be incorporated into the project and noise impacts for which no apparent solution is available must be identified. This information must be included in the final environmental document. The purpose of this requirement is that the intentions concerning noise abatement must be made as early as possible in the process. If it is determined that mitigation cannot be provided, the decision must be thoroughly documented with strong supporting evidence provided.

The noise study report shall be available for review within the technical appendix section of the environmental document. The noise study report must be finalized and approved before the environmental documents are approved and signed.

9. Extenuating Circumstances

It is virtually impossible to address every single special consideration that may arise in a specific highway project and its corresponding noise analysis. When circumstances arise such that unusual or unique considerations must be made that are not explicitly covered under these guidelines, decisions will be made in accordance with the spirit of the FHWA regulations and the CDOT guidelines. It is desired that this decision be made via collaboration between CDOT regional environmental personnel, the environmental consultant responsible for the noise analysis, the CDOT noise specialist, and, for Federal-aid projects, FHWA Division office staff. Unusual and unique circumstances will be considered on an individual project basis and the decision-making process must be fully documented in the noise technical report.

Appendix A—Key Definitions

23CFR772—Title 23, Code of Federal Regulations, Part 772 (The FHWA Noise Standard).

ADT—Average Daily Traffic.

Abatement—Measures used to substantially reduce traffic noise levels.

Approach—Noise levels which are within 1 dBA of the Noise Abatement Criteria for a corresponding land use category.

Automobiles—All vehicles with 2 axles and 4 tires. Includes passenger cars, vans, and light panel and pick-up trucks.

Background Noise—The total of all noise in a system or situation, independent of the presence of the desired signal (ambient noise).

Benefited Receiver—Any receiver which is predicted to receive at least a 3 dBA reduction in noise as a result of a noise abatement measure. Also referred to as "affected".

Berm—An earthen mound constructed for use as a noise barrier.

CDOT—Colorado Department of Transportation.

CDOT Form 1209—Noise abatement worksheet to be filled out for each noise analysis for CDOT projects.

Cost Benefit Index—A value used to determine the cost-reasonableness of noise abatement based on an average barrier cost per unit area.

Date of Public Knowledge—The date of approval of the appropriate environmental document for a highway project (CE, FONSI, ROD).

Decibel—The basic unit for measuring the difference of sound pressure levels of a sound event from a reference pressure. To approximate the range of frequencies of sound most audible to the human ear, an "A-weighting" factor is applied. Sound levels are usually reported in A-weighted decibels, abbreviated dBA.

DHV—Design Hour Volume; the traffic count determined to reflect the "worst-hour" noise conditions.

Design Year—The future year used to estimate the probable traffic volume for which a highway is designed (usually 20 years from start of construction). This year is used as the basis for calculating the predicted future (20-year) noise levels.

Existing Noise Levels—The level of noise measured or modeled at a receiver for the pre-construction condition of the highway project area.

FHWA—Federal Highway Administration.

Heavy Trucks—Any vehicle with three or more axles.

Impacted Receivers—Any receiver which, under future conditions, is either subjected to noise levels that approach or exceed the noise abatement criteria or a substantial increase in noise levels.

Insertion Loss—The predicted reduction in noise levels resulting from implementation of noise abatement measures.

Leq(h)—Hourly Equivalent Noise Level; the equivalent steady-state sound level that contains the same amount of acoustic energy as the time-varying sound level over a one hour period; the noise descriptor that is used for all traffic noise analyses for CDOT projects.

Loudness—The perceived assessment of the intensity of sound/noise.

Medium Trucks—Any vehicle with 2 axles and 6 tires.

NEPA—National Environmental Policy Act.

Noise—Unwanted sound; any sound that is generally considered annoying or offensive.

Noise Abatement Criteria (NAC)—Absolute noise levels that are used to determine when a noise impact occurs (if approached or exceeded).

Noise Barrier—A solid structure constructed between a noise source and noise impacted receivers to serve to abate the highway traffic noise.

Parallel Barriers—Two barriers which face each other on opposite sides of a highway.

Planned, Designed, and Programmed—Development on currently undeveloped land that has secured a formal building permit.

Predicted Noise Levels—Post-construction noise levels as determined via use of a traffic noise prediction model for the design year.

Privacy Fence—Fences constructed on private property or edges of development that are primarily used to separate individual lots from a roadway, and not constructed for noise abatement purposes.

Receiver—Any location of an outdoor area where frequent human activity occurs that may be impacted by highway traffic noise and may benefit from reduced noise levels.

Severe Noise Impact—A situation where predicted noise levels are 75 dBA or higher or an increase of 30 dBA over existing levels is predicted as a result of a highway project.

Shielding—Noise reduction attributable to any structures or terrain features which are located between a noise source and receiver.

Sound—Mechanical energy produced by pressure fluctuations in a medium (air, water, etc.) that travels in waves and can be detected by the human ear.

Substantial Increase—When the predicted noise levels increase by 10 dBA or more over the existing noise levels as a result of a highway project.

Substantial Noise Reduction—A noise level reduction of at least five decibels through noise abatement efforts.

Substantial Noise Reduction Goal—It shall be the goal of CDOT to achieve a feasible and reasonable reduction of at least ten decibels through noise abatement efforts.

STAMINA—Current FHWA approved traffic noise prediction model for use on CDOT projects. Uses Colorado vehicle emission levels as approved in 1995.

Study Zone—A 500 foot "halo" around the extents of a project which must be considered in the noise analysis. Measured from the edge of the traveled way, not the highway centerline.

Traffic Noise Impacts—Impacts which occur when the predicted traffic noise levels approach or exceed the noise abatement criteria or when the predicted traffic noise levels substantially exceed the existing noise levels.

Type I Projects—A proposed Federal or Federal-aid highway project for the construction of a highway on new location or the physical alteration of an existing highway which significantly changes either the horizontal or vertical alignment or increases the number of through traffic lanes.

Type II Projects—A proposed Federal or Federal-aid highway project for noise abatement on an existing highway. No formal Type II program currently exists in Colorado.

Undeveloped Lands—Lands on which exist no current human activity areas or are not currently planned, designed, and programmed for future development.

Worst Traffic Noise Condition—Traffic conditions that yield the highest absolute noise levels by consisting of the highest volume of traffic traveling at the highest possible speed. This is the hourly condition that is to be input into the model and normally reflects LOS "C" conditions. In general, this is the roadway design hour traffic volume at the posted speed limit.

Appendix B—Noise Technical Report Requirements

The purpose of the noise technical report is to provide complete documentation of a highway traffic noise analysis.

The noise analysis shall include the following steps for each alternative under detailed study, to include the "no-action" alternative:

- Identification of existing activities (receivers), developed lands, and undeveloped lands for which development is planned, designed, and programmed,
- Determination of existing noise levels,
- Prediction of future noise levels,
- Identification of traffic noise impacts, and, if necessary,
- Documentation of the evaluation of noise abatement measures.

Within the body of the report, the above steps taken shall be documented in a manner which allows clear comprehension to the reader of what analysis was done and its underlying reasoning.

The noise report shall include the following (this does not necessarily have to be in the following order and can be included as appendices where appropriate):

- **Introduction and Study Area.** Describe in detail the project that is being proposed and the study zone that is being considered.
- **Noise Basics and Applicable Guidelines.** Describe general sound and noise terminology and the guidelines and regulations that are being adhered to in the development of the noise analysis.
- **Measurement Procedures.** Describe where and when noise measurements were taken and report the results. List in a table each measurement location and the corresponding results. Not every receiver needs to be measured individually, but enough locations are required in representative points throughout the project. Collect traffic data during the measurements to be used in the validation step.
- **Measurement/Model Comparison (Validation).** Compare the measurement results with the results obtained using the computer model. Report this data in tabular form as well. In general, agreement within 3 dBA will be acceptable. If the difference for any locations is more than 3 dBA, an explanation must be provided as to the reasons for the difference. This may require that the field measurements be repeated.
- **Model Input Data.** Describe the data that is to be included in the modeling of the existing and future conditions. Include and quantify all receivers which are within the study zone of the project. Include and describe which roadways, terrain features, buildings, and ground conditions are present. Describe in detail which traffic data is to be used for the modeling, to include the speeds. Generally, this will be the design hour volume for the roadway, which reflects Level of Service "C" volumes, at the posted or future design speed limit. If the design year

traffic projections do not meet the LOS "C" conditions, use those values (do not model to the capacity of the highway unless the traffic is projected to meet that capacity). Be sure to obtain as accurate a split as possible on medium truck and heavy truck volumes.

- **Modeling.** For all receivers, model the noise levels for the existing, all future alternatives being considered, and the future no-action alternative. List all data in tabular form for easy comparison. All receivers shall be identified with an address, business name, or location in addition to whatever modeling convention is used (i.e. R1-1200 Oak Street) and to which land-use category they were classified. If any modeled receivers represent more than one actual receiver, that information also needs to be included (R1, 1200 Oak Street, Category B, 5 residences) as well.
- **Mitigation Analysis and Evaluation.** If noise impacts are identified, mitigation must be evaluated under the feasibility and reasonableness guidelines. Evaluate abatement first to attempt to achieve a 10 dBA reduction for at least one receiver (CDOT goal), then, if necessary, evaluate different abatement strategies in an iterative process down to 5 dBA (minimum reduction). At least two barrier placements and heights should be analyzed unless it is very obvious that only one location/height will be possible. The goal of this effort is to attempt to "optimize" the barrier given the feasibility and reasonableness factors.
- **Mitigation Recommendation.** Explain in detail the final recommendations concerning noise mitigation. This information will also be used in the environmental document, if applicable.
- **Construction Noise.** A brief discussion of the implications of construction noise and typical mitigation measures that can be used is also required.
- **Maps.** To aid in visualization of the project, maps should be included as appendices to the noise study report that locate the project, modeled receivers, measurement locations, and barrier locations.
- **CDOT Form 1209.** A copy of the CDOT Noise Abatement Worksheet should be filled out and attached as an appendix as well. Fill out one form for each barrier segment or project area analyzed.
- **Noise Modeling Data.** A copy of the input and output data can either be included in the appendix, or preferably, submitted with the report on floppy disks or CD.

Appendix C—Noise Abatement Worksheet

COLORADO DEPARTMENT OF TRANSPORTATION
NOISE ABATEMENT DETERMINATION

Instructions: To complete this form refer to CDOT Noise Analysis Guidelines

Project #	Project code (SA#)	STIP #	Project Location:

A. FEASIBILITY:

1. Can a continuous noise barrier or berm be constructed?. . . . . ❒ YES ❒ NO
2. Can a substantial noise reduction be achieved by constructing a noise barrier or berm?...
   10 dBA: ❒ YES ❒ NO 7-10 dBA: ❒ YES ❒ NO 5-7 dBA: ❒ YES ❒ NO
3. Are there any "fatal flaw" safety or maintenance issues involving the proposed noise barrier or berm?. . . . . ❒ YES ❒ NO

B. REASONABLENESS:

	EXTREMELY REASONABLE	REASONABLE	MARGINALLY REASONABLE	UNREASONABLE
1. Cost Benefit Index (per receiver per dBA). .	❒ Less than $3000	❒ $3000-$3750	❒ $3750-$4000	❒ More than $4000
2. Average Build Noise Level	❒ 70 dBA or More	❒ 66 - 70 dBA	❒ 63 - 66 dBA	❒ Less than 63 dBA
3. Impacted persons' desires	❒ More than 75%	❒ 50% - 75%	❒ 25% - 50%	❒ Less than 25%
4. Development Type (Category B*)	❒ More than 75%	❒ 50% - 75%	❒ 25% - 50%	❒ Less than 25%
5. Development Existence (15 years or more) .	❒ More than 75%	❒ 50% - 75%	❒ 25% - 50%	❒ Less than 25%
6. Build Noise Level vs. Existing Noise Level .	❒ Greater than 10 dBA	❒ 5 - 10 dBA	❒ 0 - 5 dBA	❒ Noise Level Decrease

***Category B – Residential, School, Hospital, Park, Picnic/Active Sports Area, Motel, Church, Library**

C. INSULATION CONSIDERATION:

1. Are normal noise abatement measures physically infeasible or economically unreasonable?. . . . . ❒ YES ❒ NO

   If the answer to 1 is YES, then:

2. a. Does this project have noise impacts to public or non-profit buildings?. . . . . .. ❒ YES ❒ NO
   b. If yes, is it reasonable and feasible to provide insulation for these buildings?. . . . . ❒ YES ❒ NO
3. a. Is private residential property affected by a 30 dB(A) or more noise level increase?. . . . . ❒ YES ❒ NO
   b. Are private residences impacted by 75 dB(A) or more?. . . . . .. ❒ YES ❒ NO

D. ADDITIONAL CONSIDERATIONS:

E. DECISION:

1. Are noise mitigation measures feasible?. . . . . ❒ YES ❒ NO
2. Are noise mitigation measures reasonable?. . . . . ❒ YES ❒ NO
3. Is insulation of buildings both feasible and reasonable?. . . . . ❒ YES ❒ NO
4. Shall noise mitigation measures be provided?. . . . . ❒ YES ❒ NO

F. DECISION DESCRIPTION AND JUSTIFICATION

Completed by:	**Date:**

Appendix E

Noxious Weed Management Plan

Appendix E. Noxious Weed Management Plan

E.1 Introduction and Regulations

This Weed Management Plan (Plan) has been prepared to support the State Highway 402 (SH 402) improvement project and to comply with procedures outlined in Federal Highway Administration (FHWA) *Guidance on Invasive Species* (1999), the Colorado Department of Transportation's (CDOT) *Integrated Noxious Weed Management Plan* 1999–2000 (INWMP), and other federal, state, and local regulations. As outlined in FHWA guidelines, this Plan:

- identifies the noxious weeds present in the project area
- outlines measures to prevent, control, and monitor weed spread
- makes recommendations for reclamation of disturbed areas

The intent of the Plan is to address the elimination or control of existing noxious weed species and to prevent the introduction and spread of existing weeds as a result of project implementation.

This Plan will be finalized before the start of construction activities. It includes results of the project area weed inventory and mapping conducted on October 1, 2004. This Plan incorporates the goals and objectives outlined in CDOT's INWMP for Maintenance Section 1, which includes the project area, summarized as:

- Comply with the Laws, Rules, and Regulations pertaining to the management of noxious weeds.
- Communicate and cooperate with CDOT personnel, the private sector, adjacent landowners, and other governmental agencies to ensure the success of control efforts.
- Educate all CDOT maintenance personnel about the noxious weeds in Section 1.
- Map all right-of-ways on state highways, interstates, and US highways in Section 1.
- Evaluate the integrated weed management plan program for Section 1.

The Larimer County Weed Control District's stated goals include:

- Enforce the Weed Act of Colorado.
- Assist landowners with any weed problems:
  - Develop a vegetation management plan for their property.
  - Identify plants on their property.
  - Make recommendations about the proper herbicide for their property.
- Promote an educational and informational program on vegetation management.
- Control noxious weeds on county property and county roadsides.

Plan implementation includes working with landowners to develop individual weed management plans for private properties, and monitoring of actions (control methods) to help bring them into compliance.

E.2 Project Area Overview

SH 402 is a heavily used two-lane, east-west arterial connecting United States Highway 287 (US 287, also known as Lincoln Avenue) and Interstate 25 (I-25).[1] This 4-mile highway is located south of the city of Loveland in Larimer County, Colorado. SH 402 serves local residents and businesses and is used as a commuter route to I-25. Access to a carpool lot (approximately 88 spaces) at the southwest quadrant of the SH 402 and I-25 interchange was included as part of this study.

The purpose of this project is to improve mobility and safety along the existing SH 402 from the US 287 intersection east to the I-25 interchange. The need for this project is to accommodate 2030 travel demand. The existing two-lane highway's substandard design includes no turn lanes, narrow shoulders, and poor sight distances (how far ahead a driver can see from the road), resulting in mobility and safety concerns.

Although current land use is chiefly rural agricultural, dispersed low-density residential areas also exist (including the residential subdivision Paradise Acres). Paradise Acres is located on the north side of SH 402, with access from Heron Drive/Olsen Drive. The Waterford Place Apartments are located in the northeast quadrant of the intersection of SH 402 and US 287.

Businesses in the corridor include gas stations, storage warehouses, a greenhouse, a landscaping center, and a feed yard. Public facilities include Larimer County's maintenance facility, the CDOT Region 4 Loveland Residency (on the north side of SH 402), and a carpool lot on the southwest corner near the I-25 interchange. Most of these properties are oriented toward the highway, with direct access and little definition of highway edge (that is, no sidewalks and little landscaping).

Permanent impacts are expected for five types of upland vegetation/land cover identified in the project area:

- croplands (13.7 acres)
- pasturelands (7.9 acres)
- prairie (0.3 acre)
- forest/woodland (0.6 acre)
- disturbed/reclaimed lands (3.7 acres)

The total acreage of permanent impacts equals 27.09 acres. This does not include 33.6 acres of developed/disturbed land cover type that will also be permanently impacted.

In addition, three wetland categories totaling 0.893 acre were determined to exist in the project area:

- palustrine forested/emergent
- palustrine emergent
- Nonjurisdictional palustrine emergent

[1] Subsequent to the 2004 actions resulting in this report, the area between US 287 and CR 13C is being widened to a four-lane highway by developers in coordination with the city of Loveland and CDOT under a Categorical Exclusion, dated September 18, 2003, so as not to preclude other potential improvements to the roadway. Permanent acreage impacts identified in this report do not reflect the development that has already occurred. Noxious weeds remaining after development between US 287 and CR 13C will be managed per Section E.4 through Section E.6 of this report.

E.3 Weed Species Present

A weed inventory was conducted within the 4-mile long right-of-way for SH 402 on October 1, 2004. Table E-1 lists noxious weeds observed in the right-of-way. Figure E-1 depicts weed locations observed and mapped by CDOT and J.F. Sato and Associates.

Table E-1. Noxious Weed Species Observed in the SH 402 Project Area

Common Name	Scientific Name	Larimer County Weed List[a]	CDOT Weed List[b]	State Noxious Weed List[a]
Quackgrass	*Elytrigia repens*			B
Russian-olive	*Elaeagnus angustifolia*		X	B
Musk thistle	*Carduus nutans* ssp. *macrolepis*	X	X	B
Canada thistle	*Breea arvense*	X	X	B
Puncturevine	*Tribulus terrestris*			C
Field bindweed	*Convolvulus arvensis*			C

Taxonomy follows Colorado Flora: Eastern Slope, *Weber and Wittmann, 2001.*

[a] *From Colorado Department of Agriculture Plant Industry Noxious Weeds website, including 2003 Revised Rules Pertaining to the Administration and Enforcement of the Colorado Noxious Weed Act (8 CCR 1203-19), accessed November 12, 2003; includes county lists. State management plans include the following designations: A = species to be eradicated, B = stop continued spread, and C = species left to local jurisdictions and use of integrated weed management controls supported.*

[b] *From CDOT Noxious Weed Mapping Project June 2004.*

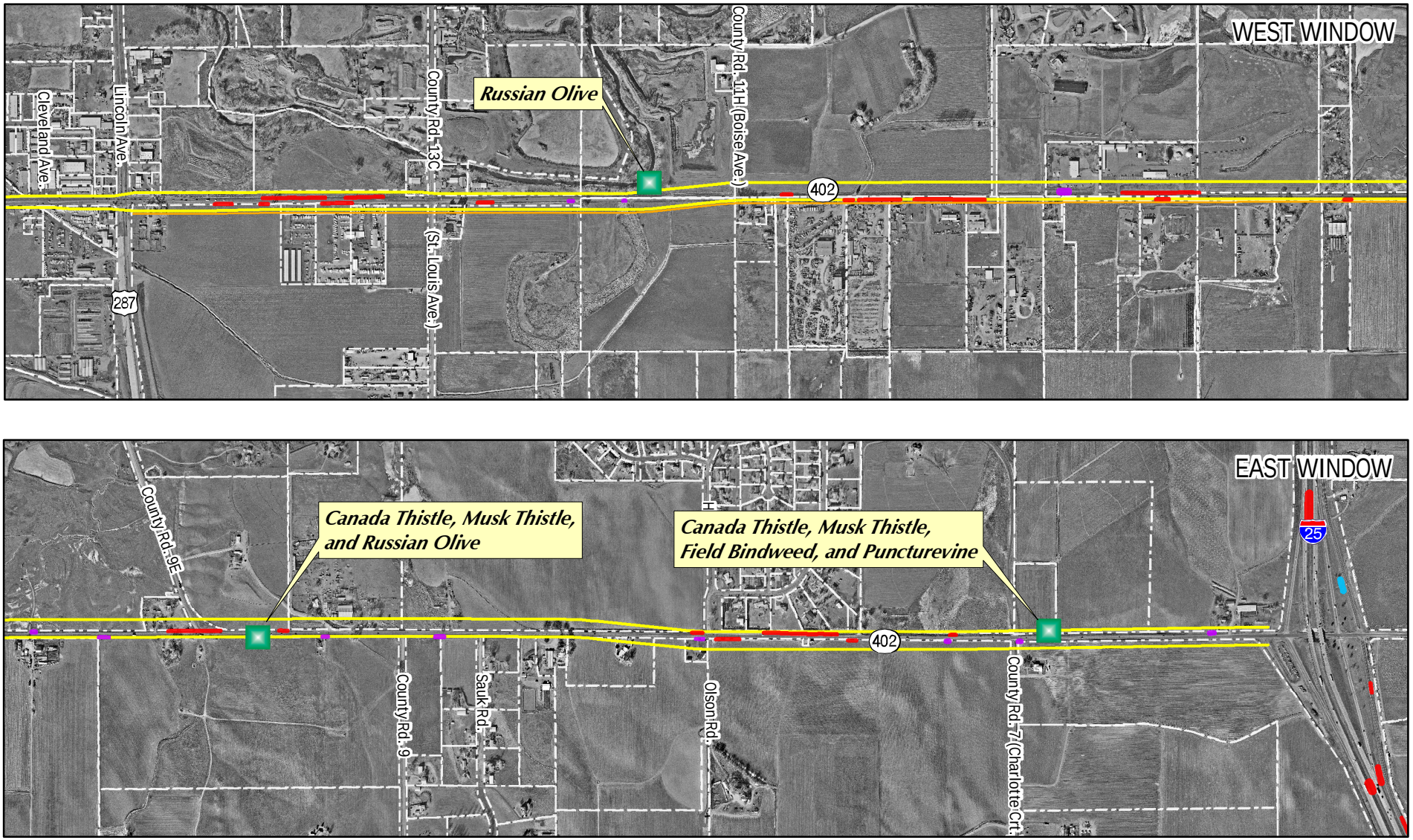
In the SH 402 project area, weed infestations are primarily associated with disturbances along roadsides, irrigation ditches, and other areas of human development. Areas with the potential to spread weeds would be along the new road edge and along smaller roads that may be disturbed for access road construction and equipment access, and at the gravel quarry (if used for equipment staging or storage).

E.4 Weed Management

E.4.1 Measures to Prevent Spread

Components of this Plan include Best Management Practices (BMPs) outlined in CDOT's *Standard Specifications for Road and Bridge Construction* (SSRBC 1999). Following the practices listed below during construction would minimize new infestations and the spread of current weed populations:

- SSRBC Section 217 specifies application of appropriate herbicides by commercial pesticide applicators licensed by the Colorado Department of Agriculture, correct timing of spraying, and appropriate methods used around wetland areas.
- Inspection of contractors' vehicles before arrival at construction site to ensure that they are free of soil, seeds, plant parts, and debris capable of transporting noxious weeds onto the site.
- Where possible, removal and storage of topsoil determined to be free from weeds, for use in revegetation efforts. No importation of topsoil onto the site.
- Certification of mulch as weed-free under the Colorado Department of Agriculture *Weed Free Forage Certification Program*; inspection as regulated by the *Weed Free Forage Act*, CRS Title 35, Article 27.5; and placement of seed/plants at the appropriate season specified in the contract (SSRBC Section 212).



LEGEND

- Property Parcel Boundaries
- Proposed Meander Alternative Right-of-Way
- CDOT Noxious Weed Survey - Canada Thistle
- CDOT Noxious Weed Survey - Field Bindweed
- CDOT Noxious Weed Survey - Musk Thistle
- JFSA Noxious Weed Survey Locations

N W E S

SCALE - 1:14,700
or 1" = 1,225'

0 500 1,000 Feet

SOURCE: 2001 1/2-foot resolution aerial photography. Land use and parcel information provided by the City of Loveland. Map produced October 26, 2004 by JFSA.

U.S. Department of Transportation Federal Highway Administration

DOT

JFS&A J.F. SATO AND ASSOCIATES

CDOT SH402 Environmental Assessment

State Highway 402

Noxious Weed Locations

FIGURE E-1

- Appropriate care of revegetated plants for three years after planting is finished to ensure establishment of plant material and verify that no new weed infestations have occurred.
- No mowing or cutting weeds when seeds are ready to disperse.

Contractors will need to take special care to prevent weed spread by construction equipment. Several CDOT BMPs focus on preventing weed introduction in mulches, seed, and other plant materials used in reclamation. The following measures are designed to reduce direct and indirect impacts on vegetation and control soil erosion and noxious weeds:

- Specification 207 covers salvaging and stockpiling topsoils for reuse in reclamation. No imported topsoil will be allowed. Topsoil heavily infested with noxious weeds will be removed from the site or buried under a minimum of 5 feet of fill.
- Specification 208 directs contractors to permanently stabilize (that is, cover disturbed areas with final seed and mulch as indicated in plans) each 17-acre increment of the project immediately when grading of that section is finished.
- Specifications 208 and 216 cover other mechanical erosion prevention methods (besides seeding, for example) and include use of soil retention blankets, placement of bales in drainages, use of silt fence, berms/diversions, slope drains, storm drain protection, check dams, channel stabilization, sediment traps or basins, and sandbag barriers.
- Specification 212 covers seeding.
- Specification 213 covers mulching seeded and other bare soil areas.
- Specification 214 covers planting.
- Specification 217 covers herbicide treatments, if needed, for weed control.

The approach to weed control recommended by the Colorado Natural Areas Program (CNAP) is use of multiple management techniques and a monitoring plan to evaluate progress in meeting objectives (CNAP 2000). Integrated weed management attempts to address the ultimate causes of infestations instead of focusing only on weed control. The advantages of this approach are that it:

- is species-specific
- is site-specific
- exploits weed weaknesses
- is practical
- poses minimal risk to organisms and their habitats

E.4.2 Controls

Noxious weed control methods recommended by CNAP and applicable to weeds identified in the project area are summarized in Table E-2. Control is usually improved with a combination of methods; in particular, seeding after removal techniques or herbicide application. Special care must be taken for weeds near water or water tables, and several products listed must not be used in these cases (Curtail, Transline, Clarity). All label directions must be followed and herbicides must be applied by a licensed applicator.

Table E-2. Recommended Control Techniques

Weed Species	Chemical[a]	Mechanical[b]	Biological	Cultural[c]
Quackgrass[d]	Spot-treat with RoundUp (foliar)	Dig out grass plant and reseed with desirable.	None available	Maintain dense stand of lawn or native grasses.
Russian-olive[e]	Pathfinder II or Garlon4 (basal or stump); Escort, RoundUp, Garlon 3A or 4 (foliar application)	Cutting, girdling, burning with removal of material; spray stump; hand-pull sprouts.	None available	Prevent seed dispersal.
Musk thistle[d]	2,4-D, Curtail, RoundUp Ultra, or Redeem R&P (foliar)	Dig, mow, pull rosette during growing season, spray regrowth.	Weevils (*Rhinocyllus conicus, Trichosirocalus horridus*) or beetles (*Cassida rubiginosa*)	Keep plant from seeding.
Canada thistle	Tordon, Curtail, Telar, Transline, Redeem, RoundUp, or Vanquish/Clarity (foliar)	Mow each month of growing season plus herbicide in fall.	Gall fly (*Urophora cardui*)	Reduce the spread of Canada thistle seeds by always purchasing weed-free seeds. Quickly eliminate new seedlings before they have a chance to form a well-developed root system.
Puncturevine	Picloram or dicamba, 2,4-D, or glyphosate, applied to seedlings	Can be controlled by digging, hand-pulling, or tilling infestations before flowering and seed production.	Two insects: *Microlarinus lareynii*, a stem-boring weevil, and *M. lypriformus*, a fruit-boring weevil.	Prevent establishment of new infestations by minimizing disturbance and seed dispersal, eliminating seed production, and maintaining healthy native communities.
Field bindweed	Picloram or dicamba, 2,4-D, or glyphosate. Best when applied during early flowering and under dry soil conditions.	Cutting, mowing, and hand-pulling have little effect.	Little evidence of good biological control agent	Maintain a healthy cover of perennial plants to discourage field bindweed establishment.

[a] *All label directions must be followed for individual chemicals. Timing of chemical treatments with growth stage is of the utmost importance. All brand names are registered trademarks.*

[b] *Mowing must be carefully timed to achieve results, always before the flowering period.*

[c] *Reseeding may have to be timed according to specific chemicals used (for example, areas sprayed with glyphostae-based chemicals such as RoundUp can be reseeded 14 days after treatment; others may require a longer waiting period). Follow label directions.*

[d] *Colorado State University (CSU) Cooperative Extension recommends using a nonionic surfactant with chemicals.*

[e] *A combination of online sources was compiled.*

E.5 Monitoring

Monitoring is an essential component of a weed control program to determine the effectiveness of control techniques. By repeatedly collecting and evaluating information from the treated area, progress can be measured and techniques adjusted if necessary to meet objectives. Monitoring what does and does not work can save the project money by eliminating ineffective techniques (CNAP 2000). Factors that should be considered when developing a monitoring program include:

- Keep it simple.
- Match the effort to the degree of risk involved (that is, Colorado Top Ten noxious weeds are more important to keep under control than low-priority species).
- Monitor over the long term.
- Keep cause and effect in mind when interpreting results (that is, compare similar situations with differing treatments when possible to determine why a treatment did or did not work).

Weed infestations in the project area should be documented with GPS mapping before construction. To track effectiveness, monitoring methods should include collecting these data again after construction, when revegetation and landscaping are complete, and after weed control treatments. Photographs taken at project implementation and yearly (from the same locations at the same time of year) can be useful in documenting the extent of and change in infestations. These photo points should be mapped with photo direction so that subsequent yearly replications will portray the same scene and comparisons can be made.

E.6 Revegetation Commitments and Recommendations

CDOT BMPs will be used for reclamation and revegetation. CDOT will reclaim areas disturbed for construction, staging, and storage activities using:

- landscape material consistent with current settings (pasture, riparian, shrubland, woodland, CDOT right-of-way)
- weed-free mulches certified by the Colorado Department of Agriculture *Weed Free Forage Certification Program* and in compliance with the *Weed Free Forage Act*, Title 35, Article 27.5, CRS, on newly planted areas to retain moisture and retard weed infestations
- BMPs according to CDOT standards to reduce soil erosion losses, including the use of erosion control blankets on steep slopes and channels, surface roughening, and using bales, silt fences, diversions, and check dams
- BMPs according to CDOT standards to reduce sediment transport including use of weed-free hay or straw bales, brush barriers, temporary berms, temporary slope drains, outlet protection, silt fences, check dams, and sediment traps and basins
- techniques that stabilize open soil surfaces larger than 17 acres, such as using mulch and mulch tackifiers for temporary erosion control when seeding cannot occur due to seasonal constraints after ground clearing and grading
- monitoring revegetated areas to prevent establishment of new weed invasions

The best reclamation success would be achieved by including native species from woody, herbaceous, and grass families wherever feasible. It is generally recommended to plant native grass and forb seeds in the fall when seed spread occurs naturally.

Bare soil must not be allowed to remain unvegetated for long because seeds from weedy species may move in via several vectors (including wind, people, equipment and animals) and become established. For slopes 2 ½:1 and steeper a soil retention blanket will be installed to increase planting success and decrease erosion.

Revegetation success increases dramatically if care is provided for two years after planting. Care should include regular watering of trees and shrubs, staking of trees to resist windthrow, and mulching to minimize moisture losses, reduce rapid temperature fluctuations, and curtail weed invasions.

E.7 References

Colorado Department of Transportation. 2000. *Integrated Noxious Weed Management Plan 1999–2000.*

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Appendix F

Air Quality Technical Memorandum

Appendix F
Air Quality Technical Memorandum
For Mobile Source Air Toxics
SH 402 from US 287 East to the I-25 Interchange
Project Number STA 402A-003
Larimer County, Colorado

Appendix F: Technical Memorandum For Mobile Source Air Toxics Environmental Assessment SH 402 from US 287 East to the I-25 Interchange Project Number STA 402A-003 Larimer County, Colorado

F.1 Background Project Information

No air quality issues have been identified for the operational aspects of the SH 402 project. Similar travel demand and vehicle miles traveled are anticipated with the No Action Alternative or the Meander Alternative. Level of Service (LOS) for 2030 is expected to be LOS F under the No Action Alternative for both through traffic and intersections and is expected to improve under the Meander Alternative to LOS C for through traffic and a range of LOS A to D for intersections.

F.2 Mobile Source Air Toxics

The Federal Highway Administration (FHWA) Air Toxic Interim Guidance (February 3, 2006) is used for analysis of mobile source air toxics (MSATs) for highway projects. The following discussion is in accordance with the interim guidance.

In addition to the "criteria" air pollutants for which there are National Ambient Air Quality Standards (NAAQS), Environmental Protection Agency (EPA) also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (such as airplanes), area sources (such as dry cleaners), and stationary sources (such as factories or refineries).

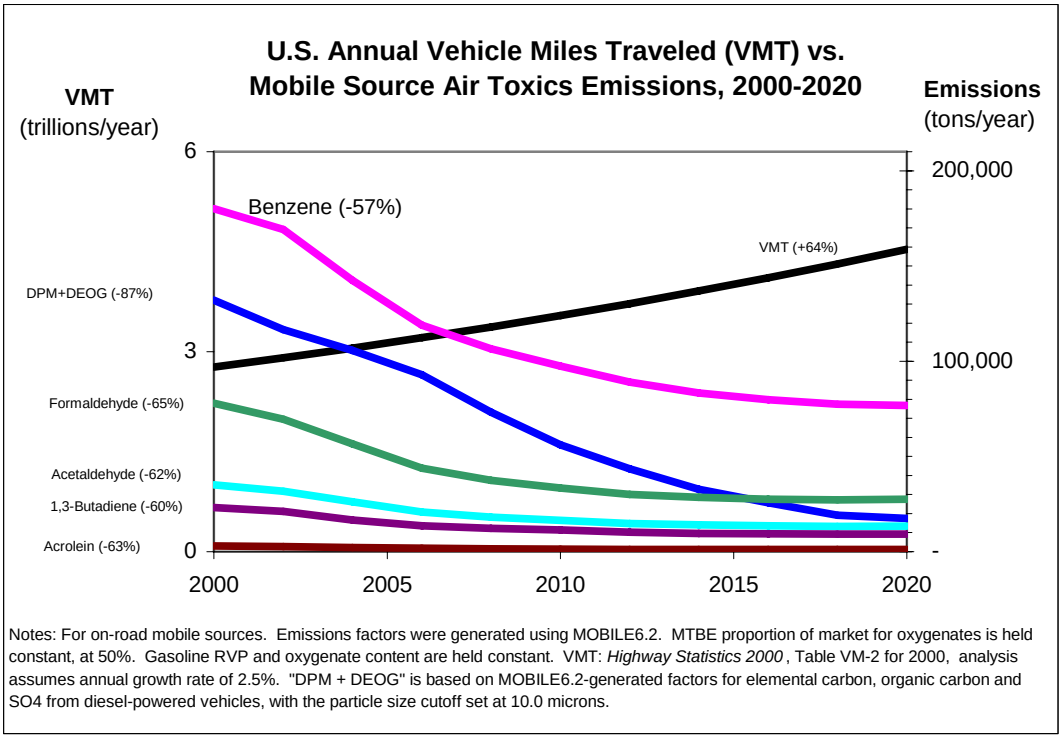
MSATs are a subset of the 188 air toxics defined by the Clean Air Act. MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline. See document No. EPA420-R-00-023 (December 2000).

EPA is the lead federal agency for administering the Clean Air Act and has certain responsibilities regarding the health effects of MSATs. EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources, 66 FR 17229 (March 29, 2001). This rule was issued under the authority in Section 202 of the Clean Air Act. In its rule, EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between 2000 and 2020, FHWA projects that even with a 64 percent increase in vehicle miles traveled (VMT), these programs will reduce on-highway emissions of benzene, formaldehyde,

1,3-butadiene, and acetaldehyde by 57 percent to 65 percent, and will reduce on-highway diesel PM emissions by 87 percent, as shown in Exhibit F-1.

As a result, EPA concluded that no further motor vehicle emissions standards or fuel standards were necessary to further control MSATs. The agency is preparing another rule under authority of CAA Section 202(l) that will address these issues and could make adjustments to the full 21 and the primary six MSATs.

Exhibit F-1
Graph of VMT versus MSAT Emissions



Notes: For on-road mobile sources. Emissions factors were generated using MOBILE6.2. MTBE proportion of market for oxygenates is held constant, at 50%. Gasoline RVP and oxygenate content are held constant. VMT: *Highway Statistics 2000*, Table VM-2 for 2000, analysis assumes annual growth rate of 2.5%. "DPM + DEOG" is based on MOBILE6.2-generated factors for elemental carbon, organic carbon and SO4 from diesel-powered vehicles, with the particle size cutoff set at 10.0 microns.

F.2.1 Unavailable or Incomplete Information for Project-Specific MSAT Impact Analysis

This EA includes a basic analysis of the likely MSAT emission impacts of this project. However, available technical tools do not enable prediction of the project-specific health impacts of the emission changes associated with the alternatives in this EA. Due to these limitations, the following discussion is included in accordance with Council on Environmental Quality (CEQ) regulations (40 CFR 1502.22(b)) regarding incomplete or unavailable information.

Evaluating the environmental and health impacts from MSATs on a proposed highway project would involve several key elements, including emissions modeling, dispersion modeling to estimate ambient concentrations resulting from the estimated emissions, exposure modeling to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of this project.

Emissions

The EPA tools to estimate MSAT emissions from motor vehicles are not sensitive to key variables determining emissions of MSATs in the context of highway projects. While MOBILE6.2 is used to predict emissions at a regional level, it has limited applicability at the project level. MOBILE6.2 is a trip-based model; emission factors are projected based on a typical trip of 7.5 miles and on average speeds for this typical trip. This means that MOBILE6.2 does not have the ability to predict emission factors for a specific vehicle operating condition at a specific location at a specific time. Because of this limitation, MOBILE6.2 can only approximate the operating speeds and levels of congestion likely to be present on the largest-scale projects; it cannot adequately capture emissions effects of smaller projects. For particulate matter, the model results are not sensitive to average trip speed, although the other MSAT emission rates do change with changes in trip speed. Lastly, in its discussions of PM under the conformity rule, EPA has identified problems with MOBILE6.2 as an obstacle to quantitative analysis.

These deficiencies compromise the capability of MOBILE6.2 to estimate MSAT emissions. MOBILE6.2 is an adequate tool for projecting emissions trends and performing relative analyses among alternatives for very large projects, but it is not sensitive enough to capture the effects of travel changes tied to smaller projects or to predict emissions near specific roadside locations.

Dispersion

The tools to predict how MSATs disperse are also limited. EPA's current regulatory models, CALINE3 and CAL3QHC, were developed and validated more than a decade ago for the purpose of predicting episodic concentrations of carbon monoxide to determine compliance with the NAAQS. The performance of dispersion models is more accurate for predicting maximum concentrations that can occur at some time at some location within a geographic area. This limitation makes it difficult to predict accurate exposure patterns at specific times at specific highway project locations across an urban area to assess potential health risk. The National Cooperative Highway Research Program (NCHRP) is conducting research on best practices in applying models and other technical methods in the analysis of MSATs. This work also will focus on identifying appropriate methods of documenting and communicating MSAT impacts in the NEPA process and to the general public. Along with these general limitations of dispersion models, FHWA is also faced with a lack of monitoring data in most areas for use in establishing project-specific MSAT background concentrations.

Exposure Levels and Health Effects

Finally, even if emission levels and concentrations of MSATs could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about project-specific health impacts. Exposure assessments are difficult because it is difficult to accurately calculate annual concentrations of MSATs near roadways and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over a 70-year period. There are also considerable uncertainties associated with the existing estimates of toxicity of the various MSATs, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts among alternatives is likely to be much smaller than the uncertainties associated with calculating the impacts. Consequently, the results of such assessments would not be

useful to decision makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

F.2.2 Summary of Existing Credible Scientific Evidence Relevant to Evaluating the Impacts of MSATs

Research into the health impacts of MSATs is ongoing. For different emission types, a variety of studies show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of a number of EPA efforts. Most notably, the agency conducted the National Air Toxics Assessment (NATA) in 1996 to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the NATA database best illustrate the levels of various toxics when aggregated to a national or state level.

EPA is in the process of assessing the risks of various kinds of exposures to these pollutants. The EPA Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database is located at www.epa.gov/iris. The following toxicity information for the six prioritized MSATs was taken from the IRIS database Weight of Evidence Characterization summaries. This information is taken verbatim from EPA's IRIS database and represents the Agency's most current evaluations of the potential hazards and toxicology of these chemicals or mixtures.

- Benzene is characterized as a known human carcinogen.
- The potential carcinogenicity of acrolein cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.
- Formaldehyde is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals.
- 1,3-butadiene is characterized as carcinogenic to humans by inhalation.
- Acetaldehyde is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposure.
- Diesel exhaust (DE) is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases.

  Diesel exhaust also represents chronic respiratory effects, possibly the primary noncancer hazard from MSATs. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

Other studies have addressed MSAT health impacts in proximity to roadways. The Health Effects Institute, a non-profit organization funded by EPA, FHWA, and industry, has undertaken a major series of studies to

research near-roadway MSAT hot spots, the health implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Some recent studies have reported that proximity to roadways is related to adverse health outcomes—particularly respiratory problems.[1] Much of this research is not specific to MSATs, instead surveying the full spectrum of both criteria and other pollutants. The FHWA cannot evaluate the validity of these studies, but more importantly, they do not provide information that would be useful to alleviate the uncertainties listed above and enable the performance of a more comprehensive evaluation of the health impacts specific to this project.

F.2.3 Relevance of Unavailable or Incomplete Information to Evaluating Reasonably Foreseeable Significant Adverse Impacts on the Environment, and Evaluation of Impacts Based upon Theoretical Approaches or Research Methods Generally Accepted in the Scientific Community

Because of the uncertainties outlined above, a quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools do allow reasonable predictions of relative emissions changes among alternatives for larger projects, the amount of MSAT emissions from each of the project alternatives and MSAT concentrations or exposures created by each of the project alternatives cannot be predicted with enough accuracy to be useful in estimating health impacts. (As noted above, the current emissions model is not capable of serving as a meaningful emissions analysis tool for smaller projects.) Therefore, the relevance of the unavailable or incomplete information is that it is not possible to make a determination of whether any of the alternatives would have "significant adverse impacts on the human environment."

F.3 Project-Level MSAT Discussion

In this document, FHWA has provided a qualitative analysis of MSAT emissions relative to the alternatives and has acknowledged that the No Action and Meander Alternatives may result in increased exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated.

As discussed above, technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions and effects of this project. However, even though reliable methods do not exist to accurately estimate the health impacts of MSATs at the project level, it is possible to qualitatively assess the levels of future MSAT emissions under the project. This can give a basis for identifying and comparing the potential differences among MSAT emissions—if any—from the No Action and Meander Alternatives. The qualitative assessment presented below is derived in part from a study conducted by the FHWA entitled *A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives*, found at www.fhwa.dot.gov/environment/airtoxic/msatcompare/msatemissions.htm.

[1] South Coast Air Quality Management District, Multiple Air Toxic Exposure Study-II (2000); Highway Health Hazards, The Sierra Club (2004) summarizing 24 Studies on the relationship between health and air quality; NEPA's Uncertainty in the Federal Legal Scheme Controlling Air Pollution from Motor Vehicles, Environmental Law Institute, 35 ELR 10273 (2005) with health studies cited therein.

F.3.1 Applicability of MSATs to the SH 402 Project Corridor

Although the difference in 2030 ADT for the No Action and Meander Alternatives was not calculated, vehicle miles traveled (VMT) for the Meander Alternative is expected to be slightly higher for the Meander Alternative than that for the No Action Alternative because the additional capacity increases the efficiency of the highway and attracts some rerouted trips from elsewhere in the transportation network. Typically, the amount of MSATs emitted would be proportional to the VMT, assuming that other variables such as fleet mix are the same for each alternative.

The increase in VMT would lead to slightly higher MSAT emissions for the Meander Alternative along the highway corridor, together with a corresponding decrease in MSAT emissions along other routes as user habits change. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds. According to EPA's MOBILE6 emissions model, emissions of all of the priority MSATs, except diesel particulate matter, decrease as speed increases.

For SH 402, it is possible that the congestion relief and associated increases in speed as a result of the additional capacity (laneage) will have more of an effect on reducing emissions than the offset due to an increase in VMT. In the case of the proposed improvements, increased capacity will mean the difference between a design year (2030) LOS F for the No Action Alternative for both intersection and through traffic versus a range of LOS A to D for the Meander Alternative intersection traffic and LOS C for through traffic. The extent to which speed-related emissions decrease will offset VMT-related emissions increases cannot be reliably projected due to the inherent deficiencies of technical models.

The additional travel lanes contemplated as part of the Meander Alternative will have the effect of moving some traffic closer to nearby homes and businesses; therefore, there may be localized areas where ambient concentrations of MSATs could be slightly higher under the Meander Alternative than under the No Action Alternative. However, as discussed above, the magnitude and the duration of these potential increases compared to the No Action Alternative cannot be accurately quantified due to the inherent deficiencies of current models. In sum, if the highway is widened and, as a result, moves closer to receptors, the localized level of MSAT emissions for the Meander Alternative could be higher relative to the No Action Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). Also, MSATs will be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than those of today.

F.3.2 National Control Programs Will Reduce MSAT Emissions by 2030 Regardless of SH 402 Project

Regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce MSAT emissions by 56 to 81 percent between 2005 and 2030. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

F.4 References Cited

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