Record of Decision 4: Appendix F

Abbreviated Visual Impact Assessment

April 2017





ABBREVIATED VISUAL IMPACT ASSESSMENT

Record of Decision 4 – SH 56 to SH 392 April 2017

1.0 Introduction

The Federal Highway Administration (FHWA) published the Guidelines for the Visual Impact Assessment of Highway Projects in January 2015 as an update to the original 1980s Visual Impact Assessment (VIA) document. The new guidelines are more efficient and comprehensive and provide a roadmap for conducting the assessment. This memorandum incorporates these new guidelines into the visual analysis.

The VIA is written as an independent report and the results of the VIA are then incorporated by reference and briefly summarized in the project's NEPA document. There are four steps in the new VIA process:

- Establishment: Defines study area, viewsheds, and landscape constraints
- Inventory: Identifies the affected environment visual quality
- Analysis: Evaluates potential impacts of the project to the visual resources and identifies the adverse, beneficial or neutral effects of the project
- Mitigation: Identifies and establishes mitigation measures for adverse effects

2.0 Project Description

The Selected Alternative discussed in ROD4 consists of the reconstruction and widening of I-25 between SH 56 and SH 392 (approximately 12 miles) to include the addition of one buffer-separated express lane in each direction. It also includes bridge and interchange modifications and reconstruction along I-25. See Figure 1 for the project location. The improvements included in the Selected Alternative for ROD4 are consistent with 2011 FEIS Preferred Alternative except that no new general purpose lanes will be constructed as part of ROD4 (for more information on the ROD4 Selected Alternative, See Chapter 2 of the ROD4 document).

3.0 Visual Impact Assessment Scoping

A scoping questionnaire helps practitioners identify which level of documentation is appropriate for the project. The project team has completed the VIA scoping questionnaire based on the best available information and professional judgement to determine which level of documentation is best suited for ROD4. Based on the scoring system on the questionnaire, an abbreviated VIA is recommended for ROD4. This questionnaire and the rationale for how the questions were responded to are included as an attachment to this document.

The abbreviated VIA is recommended because there is a moderate level of permanent changes to the existing environment, and the project is moderately compatible with the visual character desired by the community. There are no major concerns or controversies regarding the visual

character of the project and the project design will follow the landscape standards set forth by CDOT Environmental Programs Branch.

Figure 1. Project Location



4.0 Area of Visual Effect

The area of visual effect (AVE) is the area in which views of the project would be visible as influenced by the presence or absence of intervening topography, vegetation, and structures. The VIA considers a quarter mile buffer around the construction limits as the study area and the AVE (see Figure 2). The relatively flat topography within the study area allows for a clear view of the highway and surroundings. The main landscape unit within the AVE is the I-25 corridor which traverses through mostly vacant or agricultural land.



The topography within the study area allows for a clear view of the highway and surroundings.

Figure 2. Project AVE



Area of Visual Effect

5.0 Inventory of the Project Environments

Although the majority of the study area is covered with agricultural lands, there are some other natural and cultural resources along the I-25 corridor which make up the visual quality of area.

The open space buffers adjacent to the project corridor such as agricultural land and the Big Thompson Ponds State Wildlife Area offer views to on-site natural resources and views of mountains, hills, and valleys. Much of the corridor has open views of agricultural land on both sides of the highway. The mountains to the west of the study area provide an important visual background to the views along I-25. These resources increase the scenic integrity values along the I-25 corridor and greatly enhance the scenic values of the region.

Adjacent floodplains and riparian areas with grasslands, shrubs, and trees are common to larger natural drainage systems. Because these areas are generally in the lowlands, these natural resource features include views to the mountains, hills, and valleys that are typical to rural undeveloped landscapes. This setting is exemplified by the Big Thompson Ponds State Wildlife Area, located west of where the Big Thompson River crosses I-25.

The project goes through rural residential areas which are often associated with agriculture. The development density associated with residences increases when moving from south to north as the project limits approach US 34 and SH 392. In general, the less dense the land use, the greater the natural scenic integrity remains intact.



The majority of the study area is agricultural lands.



Adjacent floodplains and riparian areas with grasslands, shrubs, and trees are common to larger natural drainage systems.

Visual resources for the cultural environment were identified through a review of planning documents and a combination of field observation and desktop review. Generally, significant visual resources related to the cultural environment include historic structures, government facilities, and other notable buildings. Cultural environment visual resources include (from south to north):

- Johnson's Corner Retro diner and travel plaza adjacent to I-25 at CR 16. It opened in 1952 and is well known to travelers and neighbors for their comfort food and cinnamon rolls.
- Historic Zimmerman Grain Elevator A steel tile grain elevator with 4 bins, truck shed, and office located adjacent to the Great Western Railway and the east I-25 frontage road exemplifies the agricultural history of Colorado.
- Great Western Railway –The track is currently a subsidiary of OmniTRAX and crosses I-25 just north of the CR 20 crossing. Founded by the Great Western Sugar Company in 1901 and used to transport sugar, beets, and molasses, this feature represents the important role that railroads have played in Colorado.
- Budweiser Events Center A 7,200-seat multipurpose arena located on The Ranch and owned by Larimer County is the location of many medium sized concerts, sports and other public events.
- The Ranch Larimer County Fairgrounds A 244-acre complex of event structures and buildings for public events located adjacent to I-25 North just northeast of the Crossroads. It is home to the Larimer County fairgrounds and the Budweiser Events Center.
- Northern Regional Airport A public use airport located adjacent to I-25 North and northwest of the Crossroads that serves small to medium aircraft.



Johnson's Corner



Historic Zimmerman Grain Elevator



Great Western Railway

The I-25 North corridor moving north of SH 56 towards Loveland transitions from agricultural to urban in nature, with increasing residential and commercial uses. Highway geometrics are generally flat and linear with the exception of a slight shift of the alignment between CR 16 and CR 18. The roadway dips in this area following the natural downgradient curvature of the landscape providing a high quality view of the valley and mountains as a backdrop. The immediate vegetation surrounding the highway is landscaped grasses planted after previous construction as an erosion control technique. Throughout the corridor highway structures including two overpasses, one underpass, three railroad bridge crossings, one river bridge crossing, six interchanges, and two culvert crossings add to the visual character of the project's highway environment.

6.0 Affected Population

The neighboring land uses have a clear view across the highway for the most part along the corridor except where interchanges and bridges are present. The travelers on the highway also have a clear view of the agricultural lands, the natural environment, and the sparse cultural environment along the corridor. Based on the public meetings held throughout the course of the I-25 North project, the viewers have not expressed like or dislike of specific visual quality or resource along the corridor.



Highway geometrics are generally flat and linear.



The neighboring land uses have a clear view across the highway.

Based on a review of local land use planning documents, some of the primary visual goals important to local communities are:

- Important ecological and scenic resources, such as wetlands, floodplains, and unique landforms, should be protected and enhanced.
- Active protection of farmland and open space should be encouraged.
- Wildlife preserves, riparian corridors, views to the Rocky Mountains and greenbelt buffers along roadways should be identified as visually important to provide visual relief from more intense land uses.
- Design guidelines for both public and private developments should be maintained to promote protection and enhancement of the visual environment.
- Mountain backdrops were identified as significant visual resources.

• Historic buildings should be preserved as landscape features that help to create community identity.

7.0 Effects Analysis

Transportation improvements associated with the ROD4 Selected Alternative could result in both short-term and long-term visual impacts. Short-term impacts include disruptions during construction while long-term impacts are the result of permanent alterations that change the way people commute in and around the area. Short-term impacts would include detours, an increase in roadway congestion in and around the area, the presence of large equipment, dust from construction, and general disruption to the surrounding neighborhoods and businesses. These short-term impacts would have a temporary visual effect to the community.

Long-term impacts include relocation of businesses and residences; new interchanges; increased right-of-way; and changes to the surrounding landscape through the presence of new and modifications to existing overpasses, bridges, retaining walls, medians, as well as from alterations to the existing roadway grade. The long-term impacts associated with the ROD4 Selected Alternative include increased pavement and right-of-way and changes to the surrounding landscape through the presence of new and modification to existing overpasses, bridges, noise walls, retaining walls, medians, as well as alterations to the existing roadway grade. The ROD4 Selected Alternative potentially includes a noise wall by the Mountain Range Shadows subdivision just north of CR30 on the west side of I-25. This will change the visual experience of the drivers and residents in the area.

The design of the highway generally follows the existing grade, however, in some areas there will be minor grade changes which will not create substantial visual changes. The widening of the highway between SH 56 and SH 392 would result in a change in the visual experience for motorists and residents due to additional pavement. The bridges over the highway and the interchanges along the corridor are proposed to be reconstructed at approximately the same heights of existing structures minimizing changes to the existing visual character.

None of the identified visual resources and the visual character of the rural area will be substantively altered due to the project and the project will not alter the viewers' (including residents and travellers) experience in the area. The proposed project will not create adverse impacts of visual quality. No adverse changes to the natural, cultural, or project environments and viewer exposure or awareness are anticipated. Noise walls will be constructed with community consent at Mountain Range Shadows subdivision and will impact the viewers experience. These minor changes will not constitute an adverse impact therefore no mitigation is necessary.

8.0 Mitigation

Although no mitigation is necessary because the project has no adverse impacts on the visual resources in the study area, the project has identified measures to minimize the minor impacts to the resources. The "I-25 Corridor Common Structural Elements and Design Criteria for the Preparation of Site-Specific Structure Selection Reports" has been prepared to set aesthetic guidelines for the structures and various elements of the project, and will be followed to minimize visual impacts.

Mitigation measures to enhance the visual effects of the proposed highway widening will include landscaping and architectural features. All the new bridges and interchanges along the corridor will follow the guidelines provided in the report. Additionally to address visual effects of the widening, the project will include landscaping at interchanges and along the highway. If the community agrees with construction of the noise wall, the wall will use the same design guidelines outlined in the "I-25 Corridor Common Structural Elements and Design Criteria for the Preparation of Site-Specific Structure Selection Reports."

APPENDIX A QUESTIONNAIRE

GUIDELINES FOR THE VISUAL IMPACT ASSESSMENT OF HIGHWAY PROJECTS -APPENDICES

Appendix C VIA Scoping Questionnaire

The following ten questions can be used to determine the appropriate level of effort for assessing the impacts on visual quality that may result from a proposed highway project. The first set of five questions is concerned with environmental compatibility impacts on the visual resources of the affected environment. The second set of five questions deals with the sensitivity of the affected population of viewers to those impacts.

Consider each of the ten questions on the questionnaire and select the response that most closely applies to the project in question. Each response has a corresponding point value. After the questionnaire is completed the total score will represent the type of VIA document suitable for the project.

It is important that this scoring system be used as a preliminary guide only. Although these questions provide some guidelines for determining if a VIA is necessary, it should not, by itself, be considered definitive. If there is any hint that visual issues may be a factor in assessing impacts, it is recommended that a VIA be conducted. Although the total score will direct the user toward a particular level of VIA documentation, circumstances may necessitate selecting a different level of analysis and documentation based on previous experience, local concerns, or professional judgment. This checklist is meant to assist the writer of the VIA to understand the degree and breadth of the possible visual issues. The goal is to develop an analysis and document strategy that is appropriately thorough, efficient, and defensible.

Visual Impact Assessment Scoping Questionnaire

Project Name: North I-25 ROD4	Site Visit Date: N/A
Location: Colorado	Time: N/A
Special Conditions/Notes:	Conducted By: Anahita Behrad

Environmental Compatibility

- 1. *Will the project result in a noticeable change in the physical characteristics of the existing environment?* (Consider all project components and construction impacts both permanent and temporary, including landform changes, structures, noise barriers, vegetation removal, railing, signage, and contractor activities.)
- □ High level of permanent change (3)
- Low level of permanent or temporary change (1)
- Moderate level of permanent change (2)
- \Box No Noticeable Change (0)
- 2. Will the project complement or contrast with the visual character desired by the community? (Evaluate the scale and extent of the project features compared to the surrounding scale of the community. Is the project likely to give an urban appearance to an existing rural or suburban community? Do you anticipate that the change will be viewed by the public as positive or negative? Research planning documents, or talk with local planners and community representatives to understand the type of visual environment local residents envision for their community.)
- □ Low Compatibility (3)
- □ High compatibility (1)

- Moderate Compatibility (2)
- 3. What level of local concern is there for the types of project features (e.g., bridge structures, large excavations, sound barriers, or median planting removal) and construction impacts that are proposed? (Certain project improvements can be of special interest to local citizens, causing a heightened level of public concern, and requiring a more focused visual analysis.)
- □ High concern (3)
- Low concern (1)

- □ Moderate concern (2)
- □ Negligible Project Features (0)

- 4. Is it anticipated that to mitigate visual impacts, it may be necessary to develop extensive or novel mitigation strategies to avoid, minimize, or compensate for adverse impacts or will using conventional mitigation strategies, such as landscape or architectural treatment adequately mitigate adverse visual impacts?
- Extensive Non-Conventional Mitigation Likely
 Some non-conventional Mitigation Likely (2)
 (3)

- 🖄 Only Conventional Mitigation Likely (1)
- 5. Will this project, when seen collectively with other projects, result in an aggregate adverse change (cumulative impacts) in overall visual quality or character? (Identify any projects [both state and local] in the area that have been constructed in recent years and those currently planned for future construction. The window of time and the extent of area applicable to possible cumulative impacts should be based on a reasonable anticipation of the viewing public's perception.)
- □ Cumulative Impacts likely: 0-5 years (3)
- □ Cumulative Impacts unlikely (1)

Viewer Sensitivity

- 1. What is the potential that the project proposal may be controversial within the community, or opposed by any organized group? (This can be researched initially by talking with the state DOT and local agency management and staff familiar with the affected community's sentiments as evidenced by past projects and/or current information.)
- □ High Potential (3)
 □ Moderate Potential (2)
 ⊠ Low Potential (1)
 □ No Potential (0)
- 2. *How sensitive are potential viewer-groups likely to be regarding visible changes proposed by the project?* (Consider among other factors the number of viewers within the group, probable viewer expectations, activities, viewing duration, and orientation. The expected viewer sensitivity level may be scoped by applying professional judgment, and by soliciting information from other DOT staff, local agencies and community representatives familiar with the affected community's sentiments and demonstrated concerns.)
- □ High Sensitivity (3)

□ Moderate Sensitivity (2)

☑ Low Sensitivity (1)

Visual Impact Assessment Guidelines –Update

△ Cumulative Impacts likely: 6-10 years (2)

No Mitigation Likely (0)

- 3. To what degree does the project's aesthetic approach appear to be consistent with applicable laws, ordinances, regulations, policies or standards?
- □ Low Compatibility (3)

□ Moderate Compatibility (2)

- High compatibility (1)
- 4. Are permits going to be required by outside regulatory agencies (i.e., Federal, State, or local)? (Permit requirements can have an unintended consequence on the visual environment. Anticipated permits, as well as specific permit requirements - which are defined by the permitter, may be determined by talking with the project environmental planner and project engineer. Note: coordinate with the state DOT representative responsible for obtaining the permit prior to communicating directly with any permitting agency. Permits that may benefit from additional analysis include permits that may result in visible built features, such as infiltration basins or devices under a storm water permit or a retaining wall for wetland avoidance or permits for work in sensitive areas such as coastal development permits or on Federal lands, such as impacts to Wild and Scenic Rivers.)
- 🖄 Yes (3)
- □ No (1)
- 5. *Will the project sponsor or public benefit from a more detailed visual analysis in order to help reach consensus on a course of action to address potential visual impacts?* (Consider the proposed project features, possible visual impacts, and probable mitigation recommendations.)
- □ Yes (3)
- 🖄 No (1)

□ Maybe (2)

 \square Maybe (2)

Determining the Level of Visual Impact Assessment

Total the scores of the answers to all ten questions on the Visual Impact Assessment Scoping Questionnaire. Use the total score from the questionnaire as an indicator of the appropriate level of VIA to perform for the project. Confirm that the level suggested by the checklist is consistent with the project teams' professional judgments. If there remains doubt about whether a VIA needs to be completed, it may be prudent to conduct an Abbreviated VIA. If there remains doubt about the level of the VIA, begin with the simpler VIA process. If visual impacts emerge as a more substantial concern than anticipated, the level of VIA documentation can always be increased.

The level of the VIA can initially be based on the following ranges of total scores:

□ Score 25-30

An *Expanded VIA* is probably necessary. It is recommended that it should be proceeded by a formal visual scoping study prior to beginning the VIA to alert the project team to potential highly adverse impacts and to develop new project alternatives to avoid those impacts. These technical studies will likely receive state-wide, even national, public review. Extensive use of visual simulations and a comprehensive public involvement program would be typical.

□ Score 20-24

A *Standard VIA* is recommended. This technical study will likely receive extensive local, perhaps state-wide, public review. It would typically include several visual simulations. It would also include a thorough examination of public planning and policy documents supplemented with a direct public engagement processes to determine visual preferences.

Score 15-19

An *Abbreviated VIA* would briefly describe project features, impacts and mitigation requirements. Visual simulations would be optional. An Abbreviated VIA would receive little direct public interest beyond a summary of its findings in the project's environmental documents. Visual preferences would be based on observation and review of planning and policy documents by local jurisdictions.

□ Score 10-14

A *VIA Memorandum* addressing minor visual issues that indicates the nature of the limited impacts and any necessary mitigation strategies that should be implemented would likely be sufficient along with an explanation of why no formal analysis is required.

Score 6-9

No noticeable physical changes to the environment are proposed and no further analysis is required. Print out a copy of this completed questionnaire for your project file to document that there is no effect. A *VIA Memorandum* may be used to document that there is no effect and to explain the approach used for the determination.

APPENDIX B QUESTIONNAIRE RATIONALE



VISUAL IMPACT ASSESSMENT RECOMMENDATIONS

Record of Decision 4 – SH 56 to SH 39

Questionnaire Rationale

Environmental Compatibility

1. Will the project result in a noticeable change in the physical characteristics of the existing environment? (Consider all project components and construction impacts - both permanent and temporary, including landform changes, structures, noise barriers, vegetation removal, railing, signage, and contractor activities.)

Rationale: Moderate level of permanent change was selected as a response to this question because although the project includes reconstruction of the highway through the stretch of the project, it has moderate visual changes to the existing conditions. There are minimal noise barriers and vegetation removal; and signing and railing will follow the existing standards. The design of the highway generally follows the existing grade, however, in some areas there will be minor grade changes which will not create substantial visual changes. The widening of the highway between SH 56 and SH 392 would result in a change in the visual experience for motorists and residents due to additional pavement. The bridges over the highway and the interchanges along the corridor are proposed to be reconstructed at approximately the same heights of existing structures minimizing changes to the existing visual character.

2. Will the project complement or contrast with the visual character desired by the community? (Evaluate the scale and extent of the project features compared to the surrounding scale of the community. Is the project likely to give an urban appearance to an existing rural or suburban community? Do you anticipate that the change will be viewed by the public as positive or negative? Research planning documents, or talk with local planners and community representatives to understand the type of visual environment local residents envision for their community.)

Rationale: Moderate compatibility was selected as a response to this question because the project does not change the visual character desired by the community and it does not change the area from a rural to an urban appearance. However, a slightly larger foot print will result in a minimal change of the existing conditions aesthetics. The public has not expressed any concerns regarding these changes. For more information, please refer to Chapter 9 of the FEIS, Public and Stakeholder Involvement: <u>https://www.codot.gov/projects/north-i-25-eis/Final-EIS/documents/Main-Text/9.0 PublicandAgency%20Involvement FEIS 2011-08.pdf</u> This could also be considered a high compatibility if the project team believes a high compatibility is a better fit for this question.

3. What level of local concern is there for the types of project features (e.g., bridge structures, large excavations, sound barriers, or median planting removal) and construction impacts that are proposed? (Certain project improvements can be of special interest to local citizens, causing a heightened level of public concern, and requiring a more focused visual analysis.)

Rationale: Low concern was selected as a response to this question because there is no known concern of the public, local government, or stakeholders regarding the visual changes caused by this project. For more information, please refer to Chapter 9 of the FEIS, Public and Stakeholder Involvement: <u>https://www.codot.gov/projects/north-i-25-eis/Final-EIS/documents/Main-Text/9.0 PublicandAgency%20Involvement FEIS 2011-08.pdf</u>



4. Is it anticipated that to mitigate visual impacts, it may be necessary to develop extensive or novel mitigation strategies to avoid, minimize, or compensate for adverse impacts or will using conventional mitigation strategies, such as landscape or architectural treatment adequately mitigate adverse visual impacts?

Rationale: Only conventional mitigation strategies are most likely to be included as part of this project because there are no controversies on the minimal changes to the visual characters in the area caused by this project.

5. Will this project, when seen collectively with other projects, result in an aggregate adverse change (cumulative impacts) in overall visual quality or character? (Identify any projects [both state and local] in the area that have been constructed in recent years and those currently planned for future construction. The window of time and the extent of area applicable to possible cumulative impacts should be based on a reasonable anticipation of the viewing public's perception.)

Rationale: Cumulative impacts likely: 6-10 years was selected as response to this question because the overall visual character of the area is changing with the changes in land use and zoning and other improvement projects in the area. The North I-25 project is consistent with other previous and future projects. For more information, please refer to Section 3.26 of the Final EIS, Cumulative Impacts: <u>https://www.codot.gov/projects/north-i-25-eis/Final-EIS/documents/Main-</u>

Text/3.26 Cumulative%20Impacts FEIS 2011-08.pdf

This response could be changed to cumulative impacts are unlikely if the project team thinks it does not contribute to the changes in the area.

Viewer Sensitivity

1. What is the potential that the project proposal may be controversial within the community, or opposed by any organized group? (This can be researched initially by talking with the state DOT and local agency management and staff familiar with the affected community's sentiments as evidenced by past projects and/or current information.)

Rationale: Low potential has been selected as a response to this question because there has been no opposition or controversy within the community or any organized group on this project's visual changes to the existing conditions For more information, please refer to Appendix D of the FEIS, Public Involvement and

Local and Regional Agency Coordination: <u>https://www.codot.gov/projects/north-i-25-eis/Final-EIS/documents/Appendices/2011-08 Appendix%20D%20-%20Public%20Involvement/2011-08 Appendix%20D Public%20Involvement FEIS 1.pdf</u>

2. How sensitive are potential viewer-groups likely to be regarding visible changes proposed by the project? (Consider among other factors the number of viewers within the group, probable viewer expectations, activities, viewing duration, and orientation. The expected viewer sensitivity level may be scoped by applying professional judgment, and by soliciting information from other DOT staff, local agencies and community representatives familiar with the affected community's sentiments and demonstrated concerns.)

Rationale: Low sensitivity was selected as a response for this question because the visual changes caused by the project do not result in major changes in the overall visual quality of the area, orientation, or activities. For more information, please refer to Section 3.14 of the Final EIS, Visual Quality: <u>https://www.codot.gov/projects/north-i-25-eis/Final-EIS/documents/Main-Text/3.14 Visual%20Quality FEIS 2011-08.pdf</u>



3. To what degree does the project's aesthetic approach appear to be consistent with applicable laws, ordinances, regulations, policies or standards?

Rationale: High compatibility was selected as a response to this question because the project will be designed in accordance to all applicable policies and standards within the corrido. For more information, please refer to Section 3.14 of the Final EIS, Visual Quality: https://www.codot.gov/projects/north-i-25-eis/Final-EIS/documents/Main-Text/3.14_Visual%20Quality_FEIS_2011-08.pdfr Additionally, the "I-25 Corridor Common Structural Elements and Design Criteria for the Preparation of Site-Specific Structure Selection Reports" has been prepared to set aesthetic guidelines for the structures and various elements of the project.

4. Are permits going to be required by outside regulatory agencies (i.e., Federal, State, or local)?(Permit requirements can have an unintended consequence on the visual environment. Anticipated permits, as well as specific permit requirements - which are defined by the permitter, may be determined by talking with the project environmental planner and project engineer. Note: coordinate with the state DOT representative responsible for obtaining the permit prior to communicating directly with any permitting agency. Permits that may benefit from additional analysis include permits that may result in visible built features, such as infiltration basins or devices under a storm water permit or a retaining wall for wetland avoidance or permits for work in sensitive areas such as coastal development permits or on Federal lands, such as impacts to Wild and Scenic Rivers.)

Rationale: Yes permits from outside regulatory agencies are required and will be obtained for various elements of the project. For more information, please refer to Section 3.27 of the FEIS, Permits Required: https://www.codot.gov/projects/north-i-25-eis/Final-EIS/documents/Main-Text/3.27_Permits%20Required_FEIS_2011-08.pdf

5. Will the project sponsor or public benefit from a more detailed visual analysis in order to help reach consensus on a course of action to address potential visual impacts? (Consider the proposed project features, possible visual impacts, and probable mitigation recommendations.)

Rationale: No, because of minimal changes and visual impacts of the project and no public controversy, a more detailed visual analysis is not needed.