

I-80 CORRIDOR STUDY TECHNICAL REPORT

Appendix I
Access Evaluation

PREPARED FOR
NEVADA DEPARTMENT OF TRANSPORTATION



1. Introduction

The I-80 Corridor Study area encompasses I-80 west from the California state line to the West McCarran Boulevard (SR 651) Interchange, and I-80 east from the East McCarran Boulevard (SR650) Interchange in the City of Sparks to east of the Wadsworth-Pyramid (SR 427) Interchange. The study's intent is to provide decision-makers an action plan that will define future transportation needs along the corridor. It is also intended to provide participating agencies with a range of workable and cost-effective transportation alternatives that address current and future needs. These alternatives will be assessed for their socioeconomic, community, environmental, and fiscal impacts.

2. Purpose of the Memo

The study addresses concerns related to the need for improving transportation along the I-80 corridor by evaluating future land use demands while protecting and using existing resources. The analysis of existing conditions and corridor operation provides information regarding the operational deficiencies and need for improvement in several areas along the corridor.

This document evaluates the specific ingress/egress characteristics of I-80 in relation to current and projected land use, and it develops an overview of access in accordance with the Nevada Department of Transportation's (NDOT) *Access Management System and Standards* and Federal Highway Administration (FHWA) policy on interstate access.

3. Legal Framework

In July 1999, NDOT adopted the *Access Management System and Standards* (AMSS) as its official guidance for access management in Nevada. The AMSS standards are authorized by the following Nevada Revised Statutes (NRS):

- NRS 408.100 (Declaration of Legislative Intent)
- NRS 408.210 (Powers of Director: Closing and Construction of Highways; Removal of Encroachments)
- NRS 408.423 (Permit Required to Excavate State Highway; Exception; Fee)

The purpose of these standards is to regulate access onto state highways to protect the health, safety, and welfare of the public; to maintain the highway rights-of-way; and to preserve the functional level of state highways while meeting the needs of the motoring public.

NDOT also derives its authority to construct access management improvements from NRS 408.210 and NRS 408.423; and Nevada Administrative Code (NAC) 408.403 (facility or encroachment upon state highway or right of way for state highway: authorization required; extent of authorization) and NAC 408.427 (application; approval of local government).

NRS 408.210 states:

“2. The Director may:

(a) Divide or separate any highway into separate roadways, wherever there is particular danger to the traveling public of collisions between vehicles proceeding in opposite directions or from vehicular turning movements or cross-traffic, by constructing curbs, central dividing sections or other physical dividing lines, or by signs, marks or other devices in or on the highway appropriate to designate the dividing line.”

This verbiage clearly demonstrates the authority to divide a roadway and to prevent left-turn movements.

NRS 408.423 and NAC 408.403 both require that no encroachment be made onto NDOT right-of-way without first obtaining a permit.

NAC 408.427, in part, states:

“The department may require a change in the prior approval of the placement of a facility or other encroachment within a right of way of a state highway if the change is necessary to protect the users of the highway or the facility. If the department has issued an occupancy permit for the facility or encroachment, the required change must be made at the expense of the owner of the facility or encroachment.”

This verbiage demonstrates NDOT’s authority to modify approaches, driveways, and other improvements that pertain to access management along NDOT right-of-way.

I-80 is classified as Category I roadway based on AMSS, and it is part of the National Highway System and Interstate System. The AMSS indicates that for roadways included in this category, access will not be considered if it does not comply with FHWA’ Interstate System Access Policy, described below.

FHWA Interstate System Access Policy Overview

FHWA issued a formal policy statement published in the Federal Register on October 22, 1990 (55FR 42670), that provides guidance for justifying and documenting the need for additional access to the existing interstate system. This policy is authorized by Section 111 of Title 23, U.S.C., “Agreements relating to use of and access to rights-of-way - Interstate System” and Code of Federal Regulations (CFR) Title 49 1.48(b)(10).

Section 111 of Title 23, U.S.C. states:

“All agreements between the Secretary and the State transportation department for the construction of projects on the Interstate System shall contain a clause providing that the State will not add any points of access to, or exit from, the project in addition to those approved by the Secretary in the plans for such project, without the prior approval of the Secretary.”

The FHWA is delegated the authority to oversee the Section 111 of title 23, U.S.C. based on 49CFR 1.48(b)(10).

The policy statement issued in October 1990 was revised in February 11, 1998, and was published in the Federal Register Volume 63, Number 28 page 7-45-7047.

The FHWA Interstate System Access Policy applies to all new or revised access points to the interstate facilities regardless of funding. Access points are considered as each entrance or exit point on the mainline. Changes to an existing interchange configuration are considered revised access even though the number of access points may not change.

The policy statement reflects the planning requirements of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and ensures that the requests for new accesses are consistent and closely coordinated with the planning and environmental process. The approval for a change in control of access constitutes a federal action and would require compliance with National Environmental Policy Act (NEPA) procedures.

A copy of the FHWA Interstate System Access Policy is provided in Appendix A.

4. Access Evaluation

Corridor-specific actions were developed with the knowledge that the corridor's land use is changing and that access management will be necessary for both new and existing development; this was accomplished by performing an access-by-access inventory and evaluation that led to specific recommendations.

Interchange Spacing

AMSS requires access spacing for roadways in Category I to be 1 mile in urban areas, 2 miles in suburban areas, and 3 miles in rural areas. Table 1 evaluates the current interchange spacing.

West Verdi (Exit 2) – Verdi Interchange Area. Development is anticipated to occur north and south of these interchanges. Third Street and South Verdi Road currently connect to areas north of the existing interchanges. However, extensive land use changes north and south of the interchanges may require a review of the access at the interstate. The close spacing between

Table 1. Current I-80 Interchange Spacing

Interchange at I-80	Spacing (Miles)	Number of Access Points
West Verdi Exit 1		2
West Verdi Exit 2	0.5	4
Verdi	0.6	2
Garson	1.5	4
East Verdi	1.0	2
Truck Exit	0.5	4
Mogul	0.65	4
West 4 th	0.65	2
Robb	1.5	4
West McCarran	1.5	4
East McCarran		5
Sparks	1.3	4
Vista	0.8	4
Lockwood	2.8	4
Mustang	1.6	5
Truck Parking Exit	3.6	2
Patrick	0.8	4
USA Parkway	4.0	4
Derby	4.0	4
Orchard	2.0	4
Painted Rock	1.2	4
Truck Exit	2.0	4
Wadsworth	1.7	4

these two interchanges should be evaluated carefully before plans for new or revised access points are considered. The interstate's vicinity to environmentally sensitive areas may also trigger a full NEPA process. It is recommended that NDOT coordinate with local agencies and participate in the planning process to ensure proper adherence to the AMSS.

Mogul – West 4th Street Interchange Area. These two interchanges are very closely spaced and do not comply with existing design standards. The increase in demand at these interchanges due to development may trigger an evaluation of access. Due to the close spacing with adjacent interchanges, a consolidation of interchanges or relocation would be an alternative for consideration. The interstate's vicinity to the railroad and the Truckee River is a challenge that may involve significant cost and a long process due to environmental implications. It is recommended that NDOT coordinate with local agencies and participate in the planning process to ensure proper adherence to the AMSS.

Robb Drive Interchange Area. This interchange currently does not provide access for the northbound-to-eastbound movements. Land development south of the interchange may trigger a request for an additional access point at this location.

Lockwood Interchange Area. Development in the areas surrounding this interchange may trigger improvements in the arterial network and in the interchange itself. Improvements should consider bringing the interchange up to the current design standards, which may require a change in control of access.

Patrick Interchange Area. Development in the areas surrounding this interchange may also trigger improvements in the arterial network and in the interchange itself, similar to the Lockwood Interchange. Improvements should consider bringing the interchange up to the current design standards, which may require a change in control of access.

USA Parkway Interchange Area. This interchange was recently constructed and provides four access points. Development north of this interchange will require modifications on the interchange terminal; however, a categorical exclusion may apply.

5. Interchange Areas Access Management

Access spacing, especially in the rural areas of I-80 west corridor is currently smaller than the AMSS requirement. Corridor improvements may provide an opportunity for NDOT to update access spacing. Minimum spacing between interchanges must accommodate safe lane changes for unfamiliar drivers entering/exiting the freeway.

Although the minimum interchange spacing is established by the AMSS, research has indicated that several factors should be considered in deciding the most appropriate spacing:

- Speed
- Through-volume
- Entering and exiting volume

- Driver performance
- Signing

Future urbanization of rural areas on both sides of the corridor may require additional improvements and requests for new access points. Future high volumes on the mainline and at interchange terminals will require longer distances for lane changes. To properly maintain the functionality of the interstate, it is recommended that NDOT:

- Implement intelligent transportation system (ITS) and travel demand management (TDM) measures at existing interchanges where spacing cannot be modified.
- Maintain at least 2-mile access spacing in rural areas subject to urbanization.
- Maintain the minimum 3-mile access spacing in rural areas.
- Ensure that adequate access spacing to crossroads is maintained in the vicinity of interchange terminals.

To maintain adequate access spacing in cross arterials near interchange areas, the AMSS indicates that access rights should be obtained from NDOT at a distance of 500 feet but not less than 300 feet along the cross streets, measured from the radius point of the ramp touch-down curve. Maintaining adequate access spacing in cross arterials near interchange areas avoids traffic backup into the mainline and promotes efficient interchange terminal operation.

National Cooperative Highway Research Program (NCHRP) Report 420 provided guidelines (see Appendix B) for interchange area spacing. These guidelines indicate that minimum adequate spacing is much higher than the distance of access rights. To achieve the goals of access management in critical areas, NDOT is recommended to begin pursuing and adopting regulatory methods. These methods may include:

- Prohibiting access connections within a designated distance from a ramp meter or terminal.
- Parcels not meeting the designated distance requirements from the ramp meter or terminal are required to negotiate joint driveway agreements to gain access.
- Adopting service road policies that support an Access Management Plan.
- Creating an Access Management Overlay District.
- Incorporating policies into local land division and subdivision regulations.

6. References

Access Management System and Standards, Nevada DOT, July 1999.

Access Management Manual, TRB, 2003.

Impacts of Access Management Techniques, NCHRP Report 420, TRB 1999.

Access Rights, NCHRP Synthesis 351, TRB, 2005.