



25.1.1 Introduction

The guidance in Chapter 25 is intended for the placement of **new** dynamic trailblazers as part of new construction projects only. The STOC must be contacted if retrofitting a dynamic trailblazer to existing systems or in any other circumstances where the addition of a dynamic trailblazer is being considered.

Dynamic trailblazer assemblies are used to guide motorists along alternate routes to a freeway segment during major incidents and ramp closures. **Under a "bypass" condition**, the assemblies may be routing people exiting the freeway, either voluntarily or involuntarily, or may be informing motorists already traveling the alternate route to continue bypassing the freeway to entrance points further downstream. **Under the "default" condition**, the "bypass" sign is blank, and the directional arrow assembly is pointed in the same direction, as would a standard static route marker.



Figure 25.1-1: Typical Dynamic Trailblazer Assembly

25.1.2 Needs Assessment

Dynamic trailblazers may be used when there is a frequent need to divert arterial traffic going to the highway from the primary route to an alternate route. Dynamic trailblazers could be activated for a variety of reasons including, planned special events, recurrent incidents, and other varying traffic conditions. Diverting traffic to the alternate route with the dynamic trailblazers alerts drivers to the shortest route to the freeway and optimizes the road network. Prior to starting the actual site design of dynamic trailblazers, the designer must collect pertinent data relating to corridor-wide and site-specific issues and develop a corridor operations plan. Examples of the data to collect in the needs assessment may include the following:

- Alternate routes and diversion strategies - A detailed map of the project corridor needs to be obtained, showing system interchanges and approaches to the alternate routes.
- Inventory of local agencies - An inventory of local agencies that are present in the project corridor needs to be compiled. This inventory will be used under outreach and coordination with these agencies.
- Inventory of existing signs and signals - A detailed inventory of existing signs and signal displays must also be compiled. This information will be critical in determining trailblazer assembly placement.
- Inventory of existing utilities - For local intersection design, all utilities must be inventoried and shown on the design plan. This information must be obtained via actual Digger's Hotline locate services, since most utility plant maps show utilities in general rather than specific locations. This information is critical in determining trailblazer assembly placement.
- Site-specific issues or concerns based on initial site visit (e.g., right-of-way, utilities, landscape)

25.1.2.1 Developing a Corridor Operations Plan

In determining where individual trailblazers should be placed throughout the corridor, a corridor operations plan must be developed to determine the intended use of the trailblazers. An example of an operations corridor plan is shown in Figure 25.1-2. If the use is intended specifically to **not** direct motorists off the freeway, but to provide guidance to motorists already on the parallel route, then a plan as shown may be appropriate. If,

however, the implementation were intended to provide guidance to motorists traveling along the parallel route and being diverted from the freeway, would require additional assemblies along the eastbound approaches.

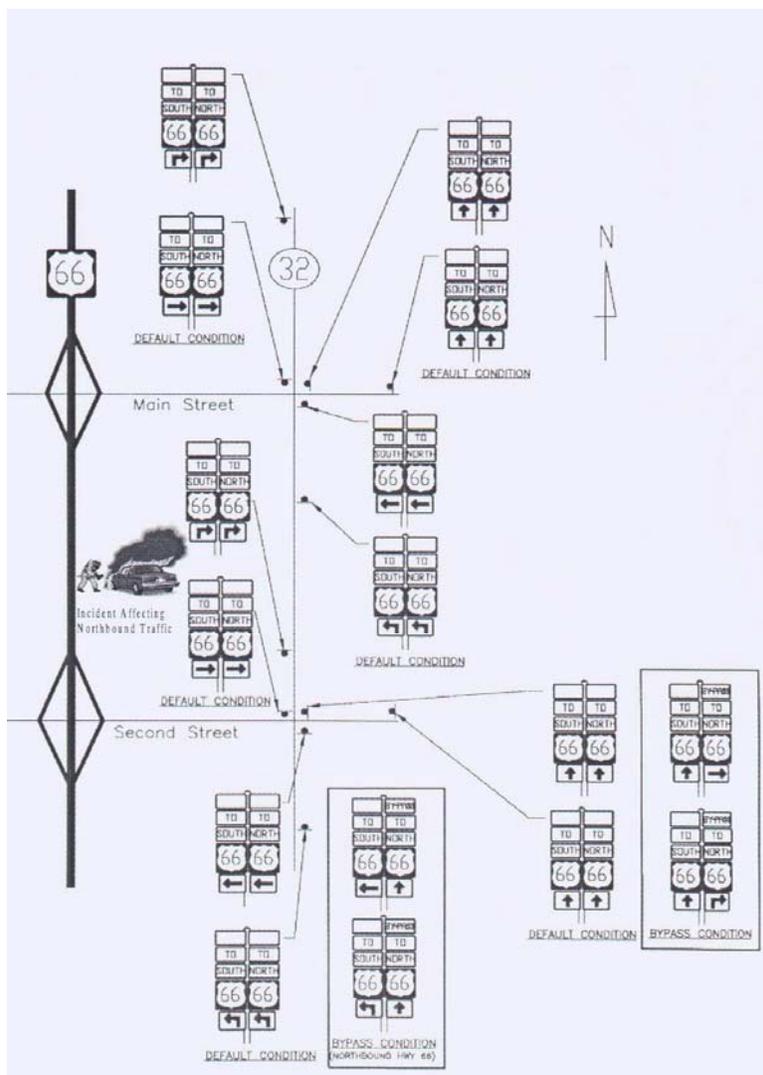


Figure 25.1-2: Typical Corridor Operations Plan for Dynamic Trailblazer Planning

25.1.2.2 Local Agency Outreach and Coordination

When implementing dynamic trailblazer assemblies, outreach to and coordination with local agencies within the corridor needs to be conducted. Questions that the designer must be prepared to answer include:

- Is the operational intent of the system to divert traffic away from the freeway under routine congestion? Severe congestion? Incidents?
- Will the alternate route be capable of carrying the additional traffic as a result of freeway diversion?
- What type of operational improvements (e.g., traffic signal timing) do you plan to implement to carry this additional traffic?
- What affect will these operational improvements have on cross-street traffic throughout the corridor?

If these questions are not investigated, and outreach with local agencies not conducted, the project may receive political and/or institutional opposition.

25.1.2.3 Dynamic Trailblazer Design Process

In the dynamic trailblazer design process, the designer must follow several steps to ensure successful implementation and proper operational capabilities. Some of these steps, such as power and communication requirements, must be addressed early in the design process and not after design for the proposed location has been completed. Each of these steps is detailed further in subsequent sections of this chapter.

Table 25.1-1 Dynamic Trailblazer Design Process Checklist

1. Collect initial data required for the proposed dynamic trailblazer design location (see 25.1.2)	
2. Establish corridor operations plan for proposed trailblazer deployment (see 25.1.2.1)	
3. Assign Name to Dynamic Trailblazer Device (see 25.2.1)	
4. Determine the location of the dynamic trailblazer assemblies and controller cabinet. (see 25.3.1 and 25.3.2)	
5. Begin the process to establish electrical service for the proposed location with the local power company. This should be done early in the design process to establish an acceptable electrical service location.	
6. Prepare the underground infrastructure, including conduit and pullboxes (see 25.3.3)	
7. Perform cable routing to provide hardwire interconnection between the controller cabinet and trailblazer devices such as signals, electrical service, etc. (see 25.3.4)	
8. Determine the communications medium used for the proposed location (see 25.5.3)	
9. Revisit steps 3 through 8 until final design is complete	
10. Coordinate and conduct outreach with local agencies surrounding the proposed corridor.	
11. Determine the construction details, special provisions, and standard specification bid items need for the proposed design along with those that need to be modified and created to provide a complete construction plan (see 25.5.4 and appendix 70)	