

Quick-Build Toolkit

Part 1: What is “Quick Build”?

2026

regional vision zero
SAFER STREETS FOR METRO DENVER

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The Denver Regional Council of Governments established a goal of zero traffic fatalities in the Denver region under the Regional Vision Zero initiative. To successfully achieve zero traffic fatalities regionwide by 2040 depends on all levels of government implementing safety countermeasures rapidly and at a wide scale. Capital projects are expensive and often take many years to implement, limiting the safety benefit that can be realized through capital projects alone. A quick-build approach — one that uses low-cost treatments, deploys them quickly and provides opportunities for piloting new treatments — is essential for advancing Regional Vision Zero goals.

Many communities in the Denver region are already implementing innovative quick-build transportation projects, while others are just getting started. The Quick-Build Toolkit shares the collective wisdom of transportation professionals throughout DRCOG's member governments and provides inspiration for communities of all sizes and contexts.

What are quick-build projects?

Quick-build projects are cheaper to install

Quick-build projects typically cost less than $250,000 — much less than a capital infrastructure project. Quick-build projects are often implemented with paint and pavement markings, flexible delineator posts, signs, temporary rubber or plastic curbs, and traffic signal timing — in other words, using a no-shovel-required approach. Materials typically last several months to several years.

"The benefit of quick-build projects is that they are low-cost, allowing limited dollars to go further, allow for faster implementation of infrastructure projects, for testing of new designs, and collection of data to determine effectiveness. Quick-build projects may also be used while designing and/or seeking funding for a more extensive infrastructure project. They can show a commitment to addressing safety quickly while working on longer lead time projects."

Federal Highway Administration's
Vision Zero Toolkit

The safety countermeasures in Part 2 of this toolkit, Inventory of Quick-Build Safety Improvements, have a high benefit-cost ratio, representing a responsible and efficient use of limited public funds.

Quick-build projects can be implemented quickly

Quick-build projects can typically be implemented within 18 months of project conception. Because of their no-shovel-required approach and ability to be adjusted in the field, the level of design effort for a quick-build project should be significantly lower than for a capital improvement project. Here are some ways in which quick-build projects can be deployed faster than traditional counterparts:

- Engineers can typically skip the surveying, geotechnical and hydrology analyses that is part of most capital construction projects.

- Any traffic analysis should be simpler than what is conducted for major developments and capital projects, given the adjustable nature and in-field testing of quick-build projects.

- If transportation staff lack advanced engineering software like AutoTurn, then curb extensions and traffic circles can be measured and drawn in the field with cotton twine and chalk and tested with a municipal vehicle, while straight lines can be drawn with a chalk line reel. Before applying more durable pavement markings or bolting vertical barriers to the pavement, consider inviting the fire department, transit operators or other emergency vehicles to navigate the project site to test how well their vehicles can maneuver.



- For fastest implementation, agencies may use materials they already have in stock or can source quickly, and design and implement improvements using in-house staff or existing on-call contracts.

Community engagement can be among the most time- and resource-consuming aspects of transportation projects. Many of the quick-build improvements listed in the Inventory of Quick-Build Safety Improvements may require only limited or no formal engagement. Some of the more noticeable and attention-grabbing projects like road diets, medians and turn restrictions can be piloted with quick-build materials and some of the engagement shifted to after installation when the community has had a chance to experience the improvements.

Quick-build projects can be adjusted

One of the key advantages of a quick-build approach is that the project can be adjusted when staff identify problems. Staff can get tangible and specific feedback from a quick-build project. Since people are experiencing an adjustable version of the safety treatment, they can more easily speak to its advantages and disadvantages.

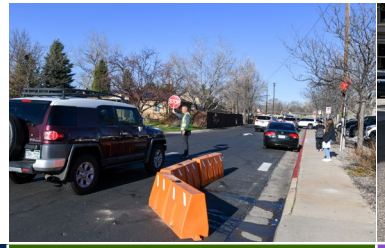
A one- or two-day demonstration project may be more about community engagement and exploring new ideas. Longer-term pilot projects, such as those in place for an entire season, may be more focused on evaluating the effect of the project on measures such as pedestrian use, vehicle speeds or yielding rates. The Quick-Build Toolkit is focused on longer pilot and interim design quick-build projects that are intended to last at least a couple months.

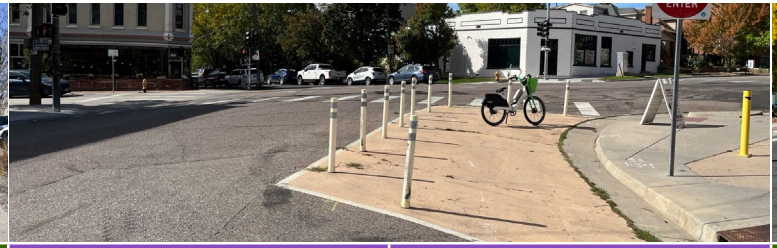
"… the capacity to make midstream adjustments is at the heart of quick build projects. … Ideally, quick builds are put in place for testing purposes or until the longer, more permanent changes can be installed."

National Cooperative Highway Research Program Research Report 1135

Table 1: Quick-build project types

Quick-build







Project type	Demonstration/ pop-up	Pilot	Interim design	Capital/long-term
Purpose	Engage the community in exploring new ideas	Evaluate impacts of improvements	Make improvements quickly	Make durable and permanent improvements
Project longevity	One day to one week	One month to one year	One to five-plus years	20 to 50-plus years
Relative cost to implement	Low	Low-medium	Low-medium	High
Project leader	Anyone (for example, city, nonprofit, students)	Local jurisdiction or road authority	Local jurisdiction or road authority	Local jurisdiction or road authority
Common materials	Cornstarch paint and tempera paint (one day), removable traffic tape and spray paint (30 days), traffic cones and barriers	Traffic paint and vertical flex posts and rubber curbs adhered with epoxy	Durable pavement markings, and vertical flex posts and rubber curbs bolted down	Major concrete work, new traffic signals

Project type	Demonstration/ pop-up	Pilot	Interim design	Capital/long-term
Public input	Occurs during project implementation	Recommended before implementation and during project lifespan and evaluation period	Recommended before implementation; optional during initial evaluation period	Occurs before project implementation
Flexibility and adjustability	Very high: Expect project to be adjusted during installation and removed within one day to one week	High: Expect project to be adjusted; project may be removed if it does not meet goals upon initial evaluation	Moderate: Project may be adjusted, but it is intended to remain in place until capital upgrades are possible	Low: Project is considered permanent, and unlikely to be majorly adjusted once installed
Project evaluation	Required: Mostly qualitative, some quantitative	Required: Qualitative and quantitative	Optional: Qualitative and quantitative	Optional: Qualitative and quantitative

Table adapted from PeopleForBikes (2016) and Street Plans (no date).

Quick-build projects can bolster support for safety improvements

Quick-build pilot projects can help to grow support for more safety improvements by:

- Allowing community members and decision-makers to experience new and unfamiliar designs that they may consider too confusing, too radical or too disruptive to existing traffic patterns, before committing to making them permanent.
- Building support in communities for new or unfamiliar projects.
- Adapting to community concerns about the project.
- Allowing experimentation with safety designs, project types and materials prior to further investment.
- Providing data on project outcomes to help shape future policy and improve street design.
- Identifying best practices for incorporation into design manuals and standard details, and treatments to consider as part of all projects.



Is a quick-build the right choice for your project?

A quick-build approach may be appropriate if:

- Budgets are limited.
- The community or local agency is unfamiliar with, or uncertain about, the benefits of a new treatment.
- An entire multimodal network (for example, a bicycle network) needs to be built out rapidly to realistically affect travel modes.

Full capital construction may be appropriate if:

- Funding is available for full construction.
- A quick-build project has proven to be a success based on quantitative and qualitative data.
- The cost of long-term maintenance of the quick-build materials is equal to or greater than the cost of upgrading the facility.



- The primary complaints about the existing quick-build facility are related to maintenance and aesthetics, rather than its effects on factors such as traffic, parking and access.

- A concrete facility (as opposed to flex-posts and paint) is needed to further improve safety.

How to use the Quick-Build Toolkit

The Quick-Build Toolkit builds on existing quick-build literature by providing customizable tools, additional case studies and the collective wisdom of transportation professionals about specific products, materials and processes. Many of the case studies are from communities in the Denver region, though there are examples and insights from across the country.

The scope of the toolkit was informed by a focus group of staff from local jurisdictions and the State of Colorado. Because of the length of some resources and the different mediums in which they are presented, the toolkit is presented in parts, making the information easier to access based on your needs and interests. Here is a short explanation of each of the toolkit's parts.

Table 2: Quick-Build Toolkit components

Name		Format	How to use
1	What is “Quick Build”?	PDF	Read or skim to get an understanding of what the advantages and disadvantages of quick-build treatments are.
2	Inventory of Quick-Build Safety Improvements	Excel workbook	Learn about various safety countermeasures that can be implemented quickly and at lower costs than traditional counterparts, how they improve safety and to what extent.. Filter countermeasures by location type and crash type. Download a copy of the toolbox and customize it for your transportation agency (for example, based on context, feasibility or staff capacity, or lessons learned about what countermeasures are most effective in your area).
3	Quick-Build Materials and Asphalt Art Considerations	PDF	Learn about materials suitable for quick-build pilot and interim design projects, examples of products on the market, feedback from transportation agencies about what products have worked well and lessons learned, and maintenance and seasonality considerations. Information about asphalt art — approaches to implementing it, materials, federal regulations, and safety considerations — is also provided.

Name		Format	How to use
4	Quick-Build Example Images	Online Flickr albums	The creativity of engineers and planners in communities across the Denver region and beyond is highlighted in a series of online Flickr photo albums. Get inspired by the various ways transportation agencies have made quick-build safety improvements and see for yourself what has worked well in various contexts. The specific materials used in each image is provided in the image description, when known. • Medians and access management • Curb extensions • Pedestrian crossing enhancements • Residential traffic calming • Road diets, bike lanes and bus lanes • Pedestrian paths • Other miscellaneous treatments
5	Before-and-After Evaluation Template	PDF	Are you looking to evaluate the effects of your quick-build project? The evaluation template provides a list of common metrics based on the goals of your project, with a description of the typical data collection method and collection timeframe.

Acknowledgements

DRCOG staff extends a huge thank you to those who shared their time and wisdom to help inform this quick-build toolkit, but especially:

- Kathryn Rush, Erik Braaten and Aaron Villere | DRCOG
- Members of the DRCOG Quick-Build Toolkit Focus Group
- Devin Joslin | City of Boulder
- Rolf Eisinger, Eric Stein and Taylor Phillips | City and County of Denver
- Emily Kleinfelter | City of Littleton
- Rob Viola, Arban Vigani, and Angelik Vizcarrondo-Laboy | New York City Department of Transportation
- Jennifer Wong | San Francisco Municipal Transportation Agency
- Rubina Ghazarian and Christopher Rider | City of Los Angeles



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The following resources were reviewed and served as a starting point for this quick-build toolkit:

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TPO-RP-26QUICKBUILD1-EN-ACC-11x85-26-11-04-v1