

Smart Riders

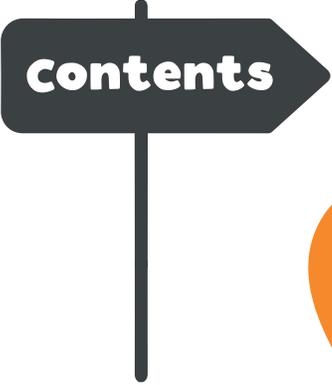
SMART TOWN

Safety Traffic Garden Guide

*Missouri Coalition
for Roadway Safety*



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SECTION 1: Introduction

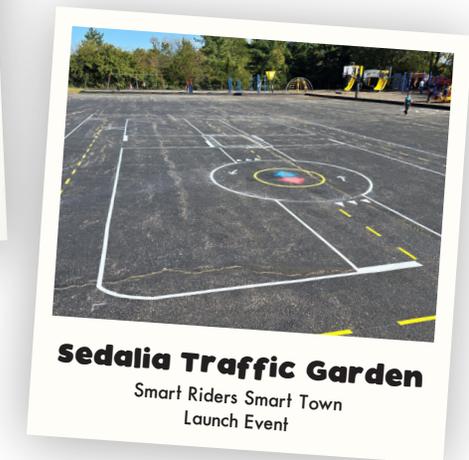
What is Smart Riders: Smart Town?

Smart Riders: Smart Town is an extension of MoDOT's Smart Riders program. It is a toolkit that helps schools and communities like yours establish pop-up or mobile traffic gardens.

What Is A Traffic Garden?

A traffic garden is a miniaturized traffic system that enables young children to learn about and practice positive traffic behaviors in a safe, controlled environment. The goal of a traffic garden is to expose children to as many kinds of traffic scenarios as possible so they have the confidence and skills to navigate those situations safely and successfully when they experience them in real life.

Traffic gardens range from mobile, tabletop place mats to brick-and-mortar, permanent structures. Regardless of the size or scope of a traffic garden, it's important that the children are provided with accurate and clear information about how traffic works. This guide will specifically focus on pop-up and mobile traffic gardens which last for a few hours to a few days.



If you would like help coordinating or designing a temporary or permanent traffic garden, please feel free to reach out to MoDOT's Highway Safety and Traffic Division.

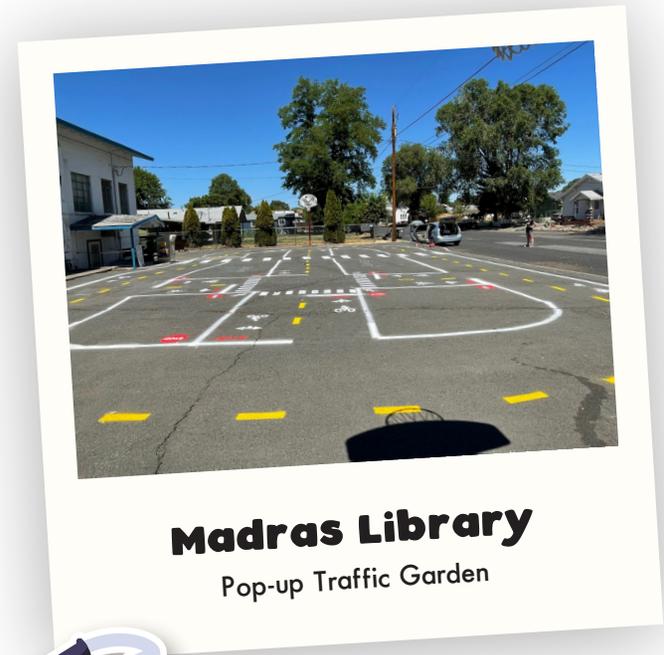
Introduction

Why is it Important to Teach Children About Traffic?

Traffic related incidents are still one of the leading causes of unintentional death and injury for children in Missouri. To achieve our goal of zero traffic deaths, it is important to be proactive. To create a culture of safe traffic and driving habits, it's important to start with our youngest generation. For most people, interacting with traffic is an inevitable part of life, so it's important to get children familiar as soon as possible.

When and How Should Children Be Introduced to Traffic Gardens?

Children can be introduced to traffic gardens at any time. It may be best to introduce them to traffic gardens as part of an overall safety lesson or message before allowing them to engage in free play. A traffic garden would operate well in conjunction with the Smart Riders modules, lessons about bicycle and walking safety, lessons about cardinal directions, or lessons about social interactions and respect.



SECTION 2: Getting started

What Do You Hope to Achieve By Hosting a Traffic Garden?

There are so many great benefits to hosting a traffic garden. The most obvious benefit is to teach children about traffic, but a traffic garden can also be a great place for children to play and exercise, practice their biking skills, use their imagination to create stories, learn about engineering, and so much more.

No matter the reason you decide to host a traffic garden, it is important to determine your goals at the very beginning of the process. This can help you in planning all other parts of the garden, such as the age and maturity level of your intended audience, what kind of garden you want, who you need as volunteers, or where you're going to host the garden. Of course, as you go through the planning process, it is a good idea to be flexible with your goals, in case something changes.

Who Should Be on the Project Team?

Your project team should consist of people with like-minded goals. Your team might consist of teachers or coaches, safety or biking advocates, community leaders, older youth, or others. Whoever is on your team, it's important to make sure everyone knows their roles and responsibilities.

There needs to be enough volunteers for all phases of the project from planning and design to installation and usage oversight. The majority of volunteers will most likely be needed at the time of installation and usage oversight. Once your traffic garden has been installed and the children begin using it, you want to make sure you have a good ratio of volunteers to children to ensure the children have enough support.

As much as possible, it is also important to involve the children themselves as part of the project team. Children are a great source of inspiration and can help decorate your traffic garden. It may also be a good idea to include older youth, such as high school students, as volunteers.

Getting started

How Do I Know Which Kind of Garden is Right for My Community?

There are a few different kinds of traffic gardens: pop-up, mobile, temporary (semi-permanent), and permanent. There are several factors to take into consideration when deciding which kind of traffic garden to implement, such as resources and funding available, location, duration of the garden, and storage for supplies. This guide specifically focuses on pop-up and mobile traffic gardens.

A pop-up traffic garden can be implemented quickly on a smaller budget but is only intended to last for a few hours or possibly a few days.

A mobile traffic garden is also only intended to last for a few days or possibly a week but is generally made up of a mobile traffic garden kit that can be transported to different locations. Mobile traffic gardens can also be set up quickly, but they can be more expensive because there is no standard traffic garden kit. Each item in the kit must be purchased individually. Mobile traffic gardens can also require large storage spaces and may have special transportation requirements. However, if you're an organization that wants to do several traffic garden events around your region or the state, it may be beneficial to invest in a well-put-together kit that can be easily and quickly put up and torn down.

Is There any Financial Support Available to Help Implement My Traffic Garden?

It may be possible to fund your traffic garden using your school or organization's budget, since a pop-up traffic garden can cost as little as \$250. However, if it's not possible to fund your traffic garden using your agency's funds, there are several options available to help you fund your project:



Host a Fundraiser



Request Donations

from car dealerships or insurance agencies. These types of businesses usually have vested interest in highway safety and are willing to help, but they may request promotion at the event or in media stories.



Request Grant Funding

from your regional planning commission, local Coalition for Roadway Safety, or Missouri Department of Transportation's Highway Safety and Traffic Division.

For more information about materials needed and cost to implement your traffic garden, see Section 3.

SECTION 3: Planning

How Do I Decide Where to Host My Traffic Garden?

When picking a site for your traffic garden, you have to first decide if the event will be hosted indoors or outdoors.

Hosting your traffic garden outdoors may increase the options you have when selecting a site because you will presumably have a larger space to set up. However, choosing a site outdoors comes with risk because of Missouri's unpredictable and sometimes harsh weather. If you decide to host your event outdoors, it is a good idea to also secure an indoor location as a back-up, if possible.

Hosting your traffic garden indoors, such as in a school gym or community event center, will eliminate any concerns about weather potentially impacting your traffic garden. By choosing an indoor site, you may be limited on the kinds of materials you can use due to potential damage of the site.

One of the most important factors to consider when selecting a site is to make sure that there is no vehicle access to the location or that vehicle access can be temporarily blocked. Whether your site is indoors or outdoors, you also want to make sure you have level ground.

	Indoor site	Outdoor site
Pros	No fear of weather	Larger site
	Easier transition from lesson to garden	More variety of available materials
	Level ground	
	No vehicle access	
Cons	Smaller site	Fear of weather
	Less variety of available materials	Possible uneven ground

Planning

Which Kind of Materials Are Best for My Traffic Garden?

The type of materials you use for your traffic garden will depend on the location and duration of your garden, the level of clean-up requested by the site owner, and the amount of funding you have available. Before you determine which kind of materials you need, it's important to understand what the materials will be used for.

Your materials will be used to create lines for the appearance of streets, to create traffic signs and signals, to create the appearance of sidewalks, and to create small, child-sized buildings.

street lines and sidewalks

Line Colors:
 Exterior = White
 Interior = Yellow
 Sidewalks = Gray

Material			
Traditional Sidewalk Chalk (~\$0.50/stick)	Spray Chalk (~\$10/can)	Duct Tape (~\$15/180ft roll)	Custom Tarp (Varies - up to \$8,000/tarp)
<p>Pros</p> <p>Cheapest, most available option</p> <p>Easy to wash away</p>	<p>Pros</p> <p>Faster to install than traditional chalk</p> <p>Works well with stencils</p>	<p>Pros</p> <p>Easy to install and correct errors as you go</p> <p>Indoor & outdoor use</p> <p>Easy to get crisp, straight lines</p>	<p>Pros</p> <p>Easiest to setup and take down</p> <p>Indoor & outdoor use</p>
<p>Cons</p> <p>Takes longer to install</p> <p>Harder to get crisp lines</p> <p>Can't use indoors</p>	<p>Cons</p> <p>Can't use indoors</p>	<p>Cons</p> <p>Can be more expensive</p> <p>May leave residue when cleaning up</p> <p>May be a bit harder to create curves</p>	<p>Cons</p> <p>Most expensive option</p> <p>Limited to one layout per tarp</p> <p>Requires larger storage space</p>

Planning

		Material		
Traffic signs and signals	<p>Freehand (No extra cost)</p> <p>Pros Cheapest option</p> <p>Cons Takes longer to install</p>	<p>Stencils (~\$545/basic kit)</p> <p>Pros Easy to get crisp, straight lines Possible to make your own for no extra cost</p> <p>Cons Takes longer to install</p>	<p>Portable Signposts (~\$120/sign)</p> <p>Pros Easiest to install</p> <p>Cons Most expensive option Requires storage space</p>	
	Buildings (optional)	<p>Regular Cardboard (No extra cost to ~\$4/48x48 pad)</p> <p>Pros Allows children to use their creativity to decorate Cheapest option</p> <p>Cons Less durable</p>	<p>Laminated Cardboard (~\$40/building)</p> <p>Pros More durable than regular cardboard</p>	<p>Pop-up Fabric Play (~\$40/building)</p> <p>Pros Easy to install Easy to store</p>

Planning

What Supplies Do I Need for My Traffic Garden?

In addition to the materials used to install your traffic garden, it may also be helpful to have some supplies to help with the installation.

Additional Supplies

- **String** to help make turns and curves
- **Measuring tape** to help measure your site, lines, and distance between features
- **Chalk snap line tool** to help make preliminary markings
- **Yard stick** or **T-square** to help make straight lines
- **Brooms** for cleanup of the site before and after installation
- **Spray box** to prevent overspray on stencils
- **Masking tape** to help make preliminary markings
- **Water** to help clean up after the event
- **Scissors** to cut string or tape
- **Measuring wheel** to help measure large distances

What Kind of Equipment is Needed to Use My Traffic Garden?

Traffic gardens are frequently used with bicycles. Not only do the children get exposed to traffic on a wheeled device, but they also get to practice and improve their biking skills while learning about traffic safety.

However, bicycles are not required. If you don't have access to bicycles, there are other options. You may wish to use other wheeled devices, such as trikes, balance bikes, scooters, adaptive bikes, or other mobility devices.

Remember that if you are using any kind of wheeled device, you must ensure each student is wearing a properly fitting helmet before entering the traffic garden. If you don't have access to or don't wish to use any wheeled devices, you can also have the students pretend to be cars and bikes and walk around the traffic garden. This could be an opportunity to be creative and craft cardboard car and bike costumes for the children to use while they walk around the garden.

Planning

How Do I Lay Out My Traffic Garden?

The layout you choose for your traffic garden will depend on how much space you have available to set up. There are some design options that have already been created that may be used. You can also create your own design. If you choose to create your own design, you must make sure that the streets and intersections are realistic and not too complicated for your learners. With either option, you want to make sure your lanes, sidewalks, and turns are wide enough to accommodate all skills and abilities.

Below are some recommendations for widths and turn radii. You can increase these numbers, but it is not recommended that you decrease them because it may make it more difficult for the children to navigate your traffic garden. Also, keep in mind that everything should look proportional since it is meant to mimic a real street. For example, three feet wide lanes with six feet wide sidewalks may look a little disproportionate to what the children are used to seeing.

These are just some of the traffic features that can be added to your traffic garden. The more features you add, the more it feels like a real traffic system. Other things to keep in mind when laying out your traffic garden:

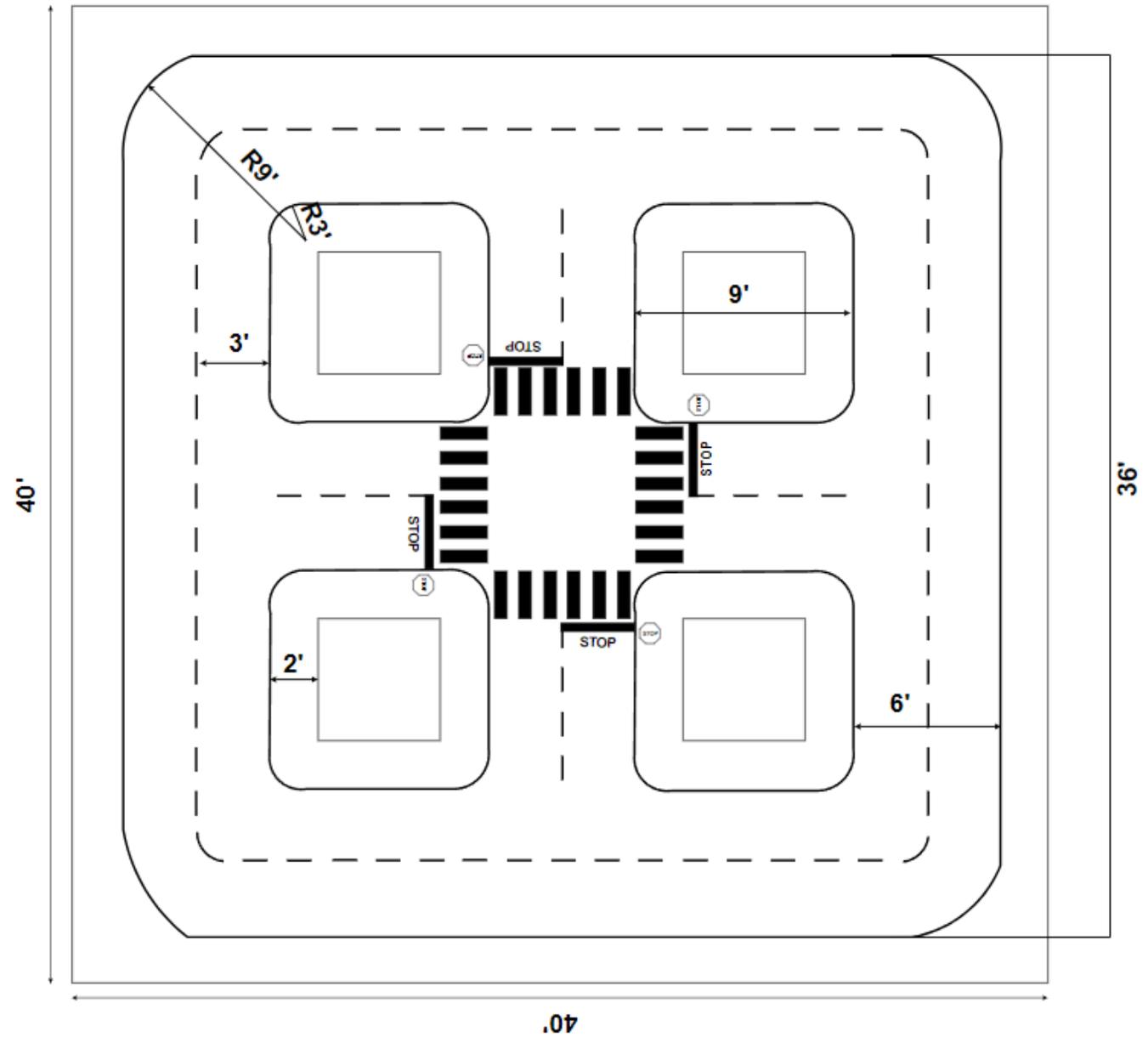
- You should create a buffer zone around your traffic garden to reduce hazards for new learners that may veer off course or lose control.
- The traffic garden should be set up in an area free from existing lines, structures, or poles. If you are using a tarp, existing lines will be covered, so this may not be an issue. It may be possible to incorporate existing structures or poles into your traffic garden if you can do it in a safe and seamless way.

Feature	Recommended size
Street Lines	2-3 inches wide
Lanes	3 feet wide
Turns	9 feet turn radius - All turns should be curved. DO NOT make harsh turn angles.
Roundabouts	6 feet radius
Sidewalks	2 feet wide
Lettering	4 inches tall - For example "STOP" marked on a lane.
Signs	10 inches wide/tall - Marked on ground
Signs with Signposts	Signpost - 2 feet tall; Sign Head - 10 inches wide/tall

Planning

Four-Way Stop Layout

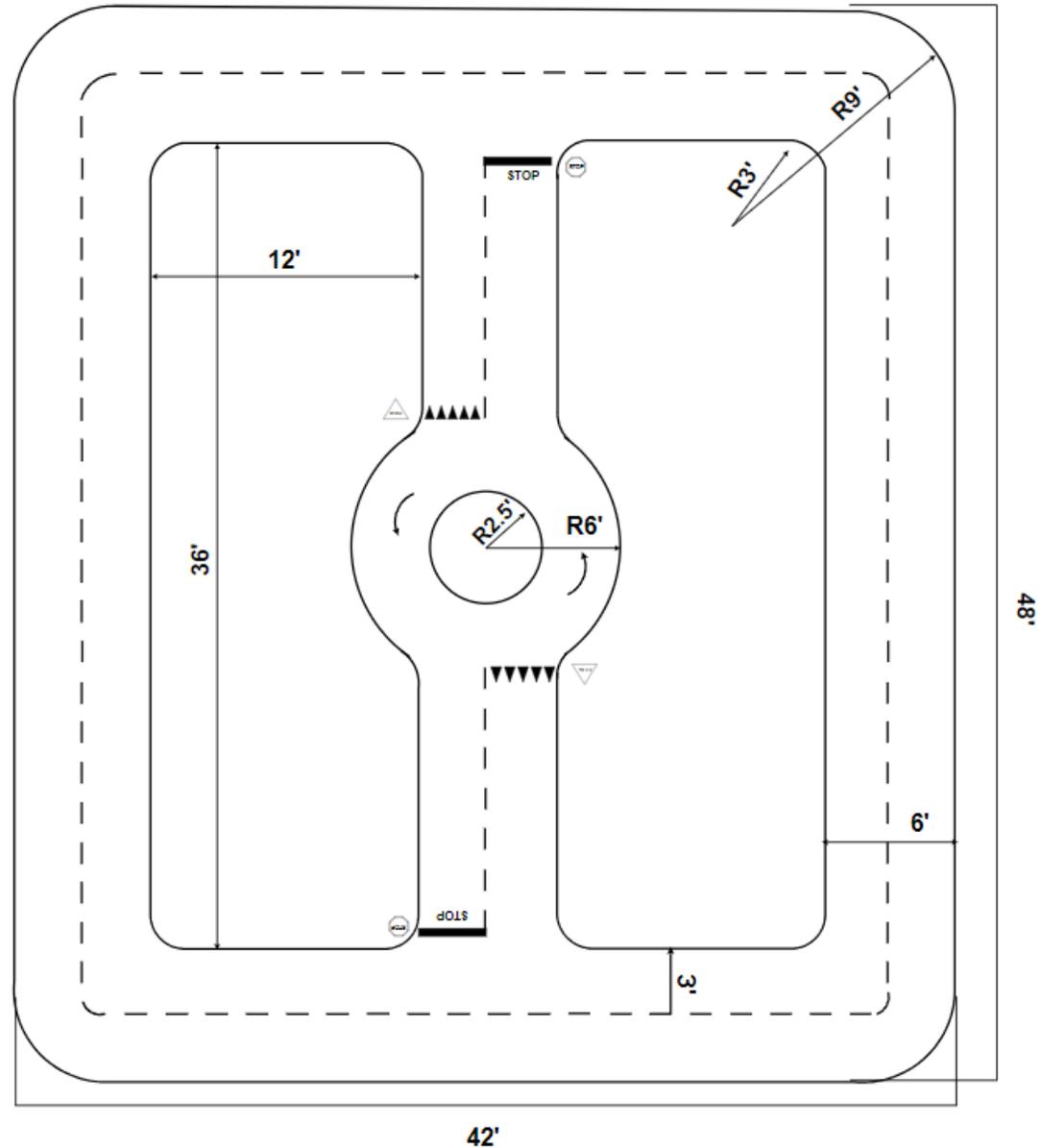
This layout can be used in small spaces, such as free space on a playground/parking lot or in a school gym.



Planning

Roundabout Layout

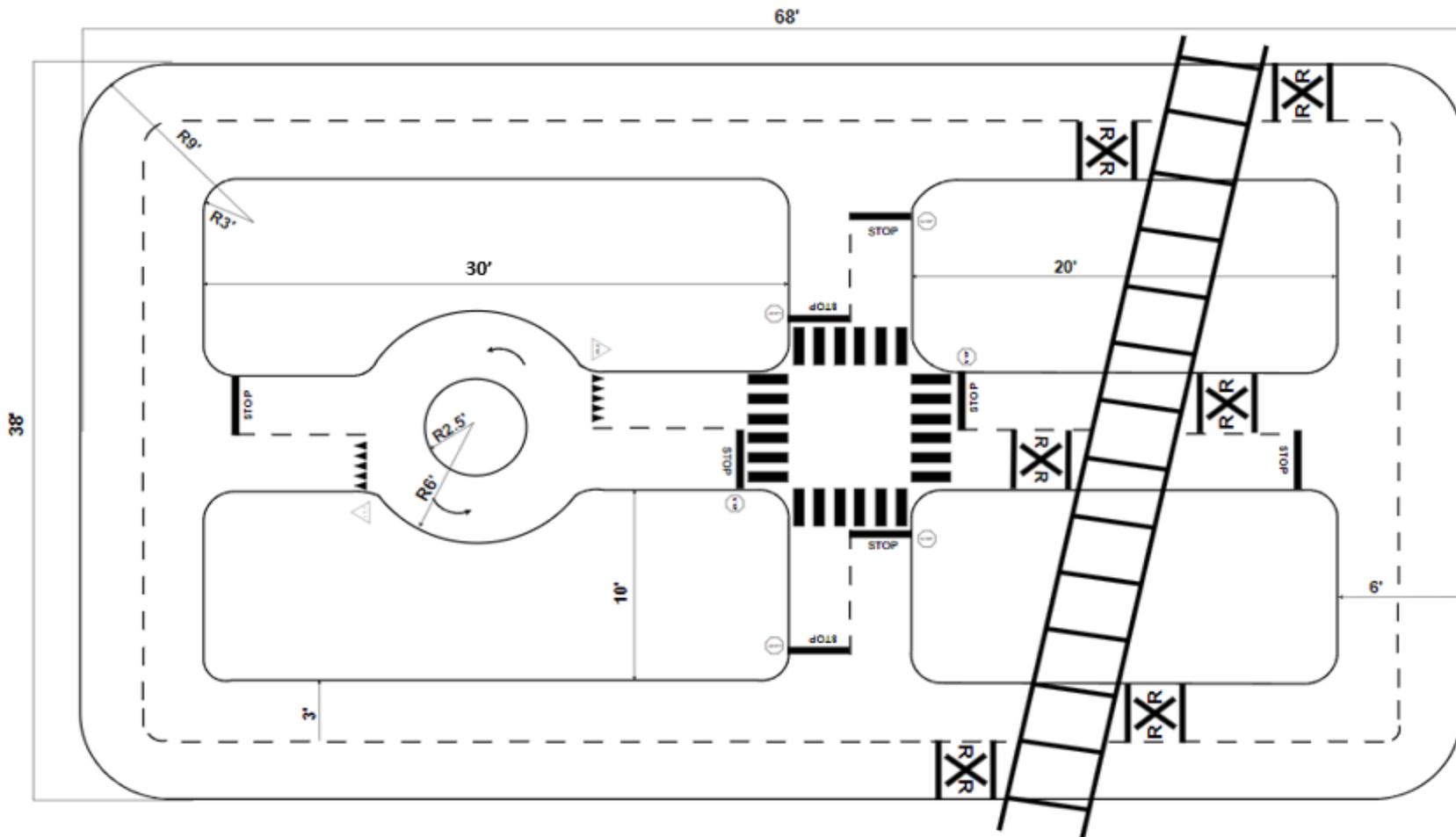
This layout requires a bit more space than the Four-Way Stop layout, but it could be a suitable layout for a corresponding bicycle lesson because it has longer stretches of road with minimal starts and stops.



Planning

Railroad Fun Layout

This layout is larger and requires more space. The difficulty is also greater than the previous two examples as it has more traffic features.



SECTION 4: Installing

How Do I Use the Materials and Layout to Install My Traffic Garden?

To install your traffic garden layout on your site, you must create a layout drawing using your layout and the site.

- 1 Obtain an aerial photo of your site, if outdoors, or a blueprint of your site, if indoors.
- 2 Get the dimensions of the space by physically measuring it, using a software, or using the blueprint.
- 3 Double-check the dimensions of the site against the dimensions of the traffic garden layout you've chosen to make sure your traffic garden layout will fit on your site. If your layout will not fit on your site, work with your planning team to pick a different layout or design a new layout that will work in your space.
- 4 Once you've got a layout that will fit on your selected site, overlay your layout onto the photo or blueprint of your site. You can do this by using a drafting software or by simply hand drawing it. Whichever way you choose to put your layout on your site reference, make sure the measurements and scale are accurate.
- 5 Use your layout drawing on the day of installation to install your traffic garden. Pre-mark the site very lightly with chalk or masking tape to make sure everything lines up and fits where you expect it to be based on your drawing. You can also create a grid on your site using very light chalk lines and use the grid squares to connect your traffic features. Make sure your grid scale is correct before you start to prevent installation errors.
- 6 Once everything is pre-marked, use your designated material to install your traffic garden layout at the site.
 - Make sure you have enough volunteers to install the layout. It may be beneficial to work as two teams of volunteers and start on opposite ends of the garden to meet in the middle.
 - To make turns, curves, and roundabouts, tie one end of a piece of string to a heavy object, such as a rock, and the other end to a piece of chalk. Cut the string to the radius you need. Have a volunteer hold the side with the rock in the center of the turn/curve/roundabout. Use the chalk side to draw as much of the circle as you need; for a turn/curve you'll only need a quarter of the circle, but for a roundabout you'll need the whole circle.

Installing

What Should I Discuss With My Learners Before and After the Traffic Garden?

Traffic gardens are most effective when they are accompanied by some kind of general or safety-specific traffic lesson. The Smart Riders modules work very well in conjunction with a traffic garden, especially the Smart Walker and Smart Bicycling modules. It may be best to do a classroom-type lesson with the students before letting them go to the traffic garden and practice the newly learned information in a hands-on setting.

As you enter the traffic garden, determine a central meeting location for the volunteers and students where small lessons can be provided, such as how to determine if your helmet fits correctly, which hand signals to use when biking, how to cross the street safely, which side of the road to walk or ride on, how to be respectful of other people using the road, and so many more.

As the students begin using and interacting with the traffic garden and each other, volunteers should walk around the garden to observe and create opportunities for teaching and scenarios.

When the children are finished using the traffic garden, make sure to provide them enough time to reflect on what they learned. This could be group reflection where everyone takes turns speaking or written reflection using a questionnaire.



Garland Elementary - Olympia, WA
Pop-up Traffic Garden



SECTION 5: Documenting Your Experience

Is There Anything I Should Keep Track of as I Implement My Traffic Garden?

As you go through the process of bringing your traffic garden to reality, it is important to keep track of everything. The more you keep track of as you go along, the easier it will be to improve, replicate, provide proof of concept for future funding, etc.

Things to Document

- **Contact information for the planning team**
- **Contact information for the volunteers**
- **Contact information for funding providers**
- **Amount of funding provided**
- **Details of the traffic garden site**
- **Time spent planning and preparing**
- **Time spent setting up and cleaning up**
- **Materials, supplies, and equipment used**
- **Total cost of materials, supplies, and equipment**
- **Number of attendees (including learners, parents, and volunteers)**

It is also important to document your experience through pictures and videos. Take before and after photos of the site and take photos and videos of your learners using the traffic garden. If you plan to publish your photos and videos anywhere, make sure to get all necessary permissions first.

Documenting Your Experience

How Do I Know if My Traffic Garden Was a Success?

Your traffic garden is successful if your students finish the event with more traffic knowledge than they had before. This can be determined by using learner reflections mentioned previously. You can also use surveys of the planning team, volunteers, and students to determine the success of the project.

Of course, there are other ways you might determine success such as staying on budget, completing deadlines on time, or having a stress-free implementation. There is always room for improvement, so make sure to also take note of things that worked well and things that didn't, even if your traffic garden was a tremendous success.



Child Care Action Council
Mobile Traffic Garden



Child Care Action Council
Mobile Traffic Garden

What Are My Next Steps Once My Traffic Garden Is Finished?

Once you document your experience, it's also important to share your experience with others. By sharing your experience, it will demonstrate the value of traffic gardens and encourage other communities in your area to implement traffic gardens of their own. Traffic gardens combined with coordinated traffic lessons are a great way to introduce our youngest learners to positive and safe traffic behaviors. Traffic gardens are just one of the tools we can use to move closer to our goal of zero traffic deaths.

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