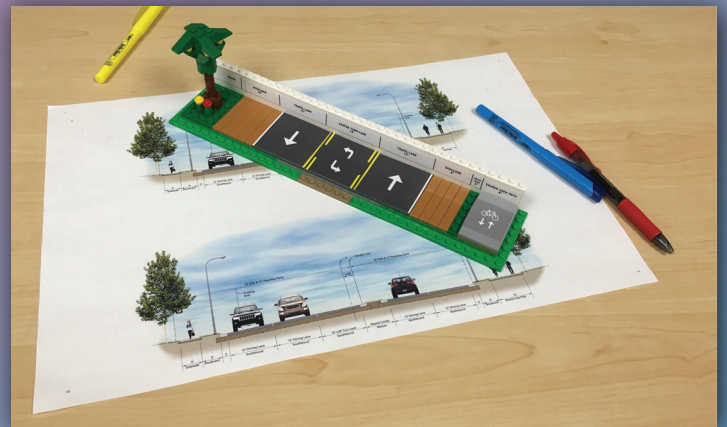


STREET SECTION DESIGN

CONSUMER GUIDE

FROM BEYONDWARE 



**BEYOND TYPICALS, STREETMIX, REMIX, 3DS
SKETCHUP, SPREADSHEETS AND MORE**

BACKGROUND

USING STREET TYPICAL SECTIONS TO DESIGN AND COMMUNICATE PROJECTS

Designing roads using cross sections is a common practice in the field of civil engineering, as it allows professionals to plan and visualize the layout and functionality of a roadway in detail. There are many different methods for designing roads using cross sections, each with its own benefits and limitations. In this guide, we will compare a variety of different methods for designing roads using cross sections, including multi-tool workflows, computer-aided design (CAD) software, 2D web creators, our own Beyond Typical and more.

By comparing these 10 methods, we aim to provide a comprehensive overview of the different options available to professionals working in the field of road design, and to help you choose the best method for your specific needs and goals.

We've separated these options into 4 different categories: 3D section creators, 2D section creators, custom workflows and other. This guide will first review each of these categories and options and then conclude by comparing all 10.

We have decades of experience in civil engineering and 3D visualization and have used our expertise in combination with in-depth research to find the best possible (but non-comprehensive) list of options available to design roads and streets using cross sections.

-The Beyondware Team
www.beyondware.com



BEYONDWARE

3D CREATORS

CUSTOM-BUILT SOFTWARE FOR RAPID AND REALISTIC STREET DESIGN

For now, this is a category of one. Beyond Typical (developed and published by our Beyondware team) was launched in early 2022 and has quickly become the tool of choice for engineering firms, public agencies and contractors looking to quickly and accurately communicate their projects. Users can create road sections in minutes by dragging and dropping pre-made sections and adjusting them with textures, assets, labels and more. What was previously only possible using complex software workflows and expert artists is now possible for almost anyone.

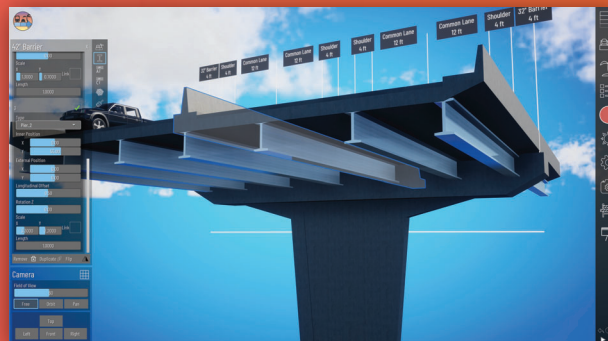
Options: Beyond Typical

Pros: Ease of use, realism, aesthetics, real-time editing, phasing, bridge design and other features

Cons: PC download and graphics card may be limiting for some users. Pro license required for all features.



Construction staging render



Bridge design and customization



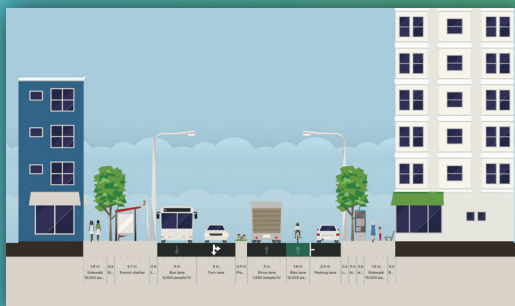
2D CREATORS

WEB-BASED AND EASY TO USE

These are browser-based applications that allow users to design their own virtual streets by dragging 2D sections and choosing from a variety of options such as lane widths, types of pavement, and types of street furniture. Users can create a street layout that reflects their desired vision for a particular location, and can then share their designs with others. These 2D creators are intended to be used as tools for urban planning, and are meant to facilitate discussions about the design and use of streets in cities and towns. They can be used by anyone who is interested in creating more livable, walkable, and sustainable communities.

Options: Streetmix.net, Streetplan.net and [Pros: Ease of use, no download necessary, free options available, real-time editing](http://Remix</p></div><div data-bbox=)

Cons: Lack of realism and customization, limited to 2D, lack of features beyond basic functionality



streetmix.net



streetplan.net



CUSTOM WORKFLOWS

FLEXIBLE WORKFLOWS THAT CAN HANDLE MOST SCENARIOS

These workflows can be used to create realistic and visually appealing designs, which can help to communicate your ideas effectively to others. This can be especially important when presenting your street design to stakeholders or decision-makers, as a well-designed and visually compelling presentation can help to convey the benefits and value of your design. Also, 3D modeling and visualization software can be used to create interactive 3D simulations, which can be useful for testing and analyzing different design scenarios, and for optimizing the layout and functionality of your streets. The major downside of these workflows are that they can be very costly and only available for experienced and trained 3D artists and teams.

Options: CAD linework to PDF, Sketchup to Lumion/Twinmotion, 3ds Max, Photoshop and others

Pros: Some of the best photorealism and animation can be achieved, very customizable

Cons: Can be very expensive and time-consuming, end results may not be editable in real-time



Sketchup to Lumion by Sam Lytle while at Civil FX



OTHER OPTIONS

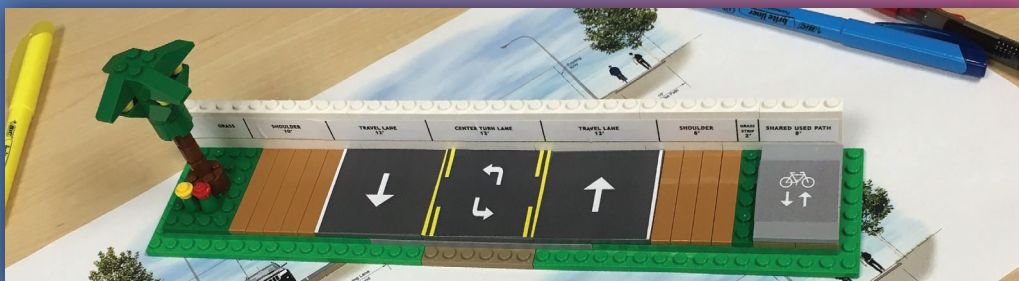
LESS COMMON BUT STILL MAY BE VIABLE OPTIONS

While working in this industry for many years, we've come across some creative methods of designing streets using sections. One of the more useful and popular methods includes using a simple spreadsheet. Spreadsheets can be useful tools for designing streets using sections because users can enter the size and shape of the street sections, as well as any other relevant information such as the width of the roadway, the type of pavement, and the location of street furniture. Users may also be able to include data on the volume of traffic on the street, as well as the types of vehicles that use it for analysis of the design across several disciplines. Physical creations such as cardboard or Lego have also been used successfully to communicate project designs, especially at in-person public meetings.

Options: Spreadsheets, physical creations

Pros: Spreadsheets are easy to use and edit, physical creations are tactile and interesting

Cons: Not as realistic or aesthetically pleasing, may not be viable options for many projects.



Lego section by Chris Harris (Design and Visualization Coordinator at B&M) while at KLJ

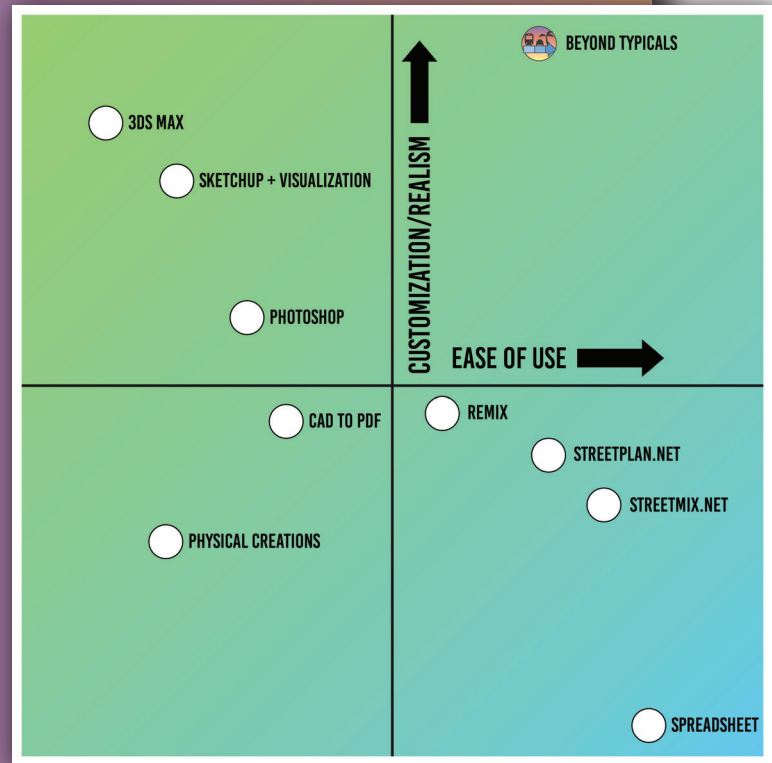


COMPARISON

STRENGTHS AND WEAKNESSES

Most of these street section design options find success in either ease of use or customization/realism, but not both. Beyond Typicals stands out as an exception with its low learning curve while also offering high-end graphics and customization.

The table below lists all 10 options graded on 7 metrics, showing that each option typically has unique strengths and weaknesses.



Typical Section Graphic Creation Options		Ease of Use	Time/Effort	Photorealism	Aesthetics	Animation	Real-Time	Other Features
3D	Beyond Typical	Better	Better	Best	Best	Best	Best	Best
	Streetmix.net	Best	Best	Substandard	Better	None	Acceptable	Substandard
2D Creators	Streetplan.net	Better	Better	Acceptable	Substandard	None	Acceptable	Acceptable
	Remix	Acceptable	Acceptable	Substandard	Better	None	Substandard	Better
	CAD Linework to PDF	Acceptable	Substandard	Poor	Poor	None	None	None
Custom Workflows	Sketchup to Lumion/Twinmotion	Poor	Substandard	Better	Best	Better	None	None
	3ds Max	Poor	Poor	Best	Better	Better	None	None
	Photoshop Work	Acceptable	Substandard	Acceptable	Better	None	None	None
	Physical Creations (Lego/Cardboard...)	Substandard	Substandard	Substandard	Acceptable	None	Substandard	Substandard
Other	Spreadsheets	Better	Better	Poor	Poor	None	Acceptable	Substandard

CONCLUSION

WHAT THIS INFORMATION TELLS US ABOUT USING SECTIONS FOR STREET DESIGN

Learning and comparing these 10 options for street design using sections is valuable across several metrics.

First, using typical sections remains a vital component of design, decision-making and communication in transportation.

Second, there are a number of options available to evaluate and use depending on the team and project.

And finally, for those most serious about rapid design and communication of their transportation projects, Beyond Typical has been specifically built for this purpose. We have deliberately worked to combine the ease of use of the 2D web creators with the realism and aesthetics of complex 3D design workflows. Combining the real-time adjustments, phasing and other features, it is clear why Beyond Typical is quickly becoming the visualization and planning tool of choice for engineering firms, public agencies and contractors throughout the world.

For more information and to start a free, 30-day trial, visit www.beyondtypicals.com

BEYONDTYPICALS

