



RealHighway User Manual



NAM
Network Addon Mod

DISCLAIMER

Please note that this document is still undergoing revision, to account for all the changes that have been made since the documentation was last updated (NAM 31). A number of current features or changes may not be described from this manual. Further updates will be published as they become available—some more recent information can be found in the RHW section of the NAM's Wiki-based documentation on the [SC4 Encyclopaedia](#), hosted by SC4 Devotion. In the meantime, please visit the NAM Place board at [SC4 Devotion](#), or the NAM & Transit Networks board at [Simtropolis](#) to ask any questions pertaining to features that are unlisted or have undergone revision since this manual's original publication. We are always happy to help, and apologize for the inconvenience.

-The NAM Team

- **Preface**
- **Overview**

The **RealHighway** (abbreviated RHW), formerly **Rural Highway**, is a mod which utilizes an unused, unfinished network that Maxis left in the game's files, reintegrated into SC4 by the NAM Team, to create a series of highway networks of varying widths. Despite its former name, it has evolved beyond the original scope of the project, into an all-purpose highway network. Coupled with the **Modular Interchange System** (MIS), it allows for a highly-customisable and modular network with nearly complete freedom in the creation of custom interchanges.

NOTE: When reading this document, there may be key terms to take note of or terms that are used differently than normal. This includes the following terms:

- **Bridge** and **Overpass**: In the field of transit modding, bridges over other networks and bridges over water and ravines are two completely different things. A bridge that goes over another network is an **overpass**. A bridge that goes over water is what is considered a bridge. Overpasses and elevated networks have a fixed height, and have to be placed using starters, whereas bridges have to be selected through the bridge selection window.
 - **Carriageway**: This may be used as a synonym for a single one-way RHW.
 - **Diagonal**: This refers to being at a 45-degree angle to the Simcity 4 grid.
 - **Highway**: This term will be used universally to refer to freeway, expressway, interstate, divided highway, and dual carriageway.
 - **LHD** and **RHD**: Left-hand drive and right-hand drive instead refer to which side of the **road** you drive on, not which side of the **car** you drive in.
 - **Orthogonal**: This is a synonym for “**perpendicular**” in certain mathematical fields, but instead refers to being in line, or parallel, with the Simcity 4 grid. Perpendicular is used instead for networks crossing at 90-degree angles.
 - **Compatibility**
- The NAM and its plugins are only compatible with **SimCity 4 "Rush Hour"** or **SimCity 4 Deluxe**, Version 1.1.638 or higher. It is required that you install the Simcity 4 Patch (for Version 1.1.638) before proceeding with installing. If you have purchased Simcity 4 Deluxe from Steam, the Version number will be 1.1.640, and should be pre-patched.
- Attempting to use this mod with other versions of SimCity 4 will cause the game to instantly crash upon loading.
- **Disclaimer**

The usage of this download is on your own risk. We try to test our products extensively, so they should work properly, but errors may still exist. Feel free to modify the items for yourself and show them in your city journals, but please don't distribute them without asking first.

- **Installation and Setup**

In order to install the **RealHighway Mod** using the NAM Installer, simply select the option for it. If you choose to install it at another time, you can simply rerun the installer. You may customize the size of your RHW installation by selecting which networks you would like to install. By default, the "L3" (Level 3, 22.5m height) and "L4" (Level 4, 30m height) networks are NOT installed. These must be manually checked.

The RHW contains the following optional plugins:

- **Regional Transportation View Mod:** Enables the RHW to be visible in the Regional Transportation View
- **RHW Roundabout Arrow Reduction Plugin:** Hides the arrows found on the OWR Roundabouts when MIS crosses with them

The following NAM Plugins are recommended to install along with RHW:

- **Auto-Destruct Hole Diggers and Raisers.**

The following third-party addons are also recommended:

- **Any Third-Party Slope Mod with RHW support.** Examples include the NHP Ennedi Slope Mod, which includes all networks, or bigdope404's RHW Slope Mod, which only applies to the RHW. Note that the NAM does NOT include its own slope mod.

- **Useful links**

- The RHW Development Thread over at [SC4D](#) and [ST](#).
- The [RHW Interchange Guide](#)

- **History and Development**
- **ANT Plugin**

Prior to the initial development of RHW, it started out as the **Additional Network Tool**, or ANT. It was originally an unused network that was left in the game and was intended to build **Dirt Roads**. It was reintegrated by the NAM Team as Road-like tool with double the capacity and speed of Road and was offered as an optional NAM Plugin called the **ANT Plugin**.

Its usage at the time was quite limited at the time. Some players used it as a slope-building tool, others advocated for its original use as a dirt road to be restored, and others still found it to be useless.

- **Version 1.2 and Version 1.3b**

The RHW project was started as the **Rural Highway Mod** by **qurlix** and **nooneatall** in August 2005, with an initial "public alpha" release, Version 1.2 (also variously called 0.12 and v12--the decimal point has continually moved around during the history of the project), coming in November of that same year. **qurlix** had also planned a couple of other updates at various points, Version 1.5 and Version 1.7, neither of which was released.

Tarkus became involved in the project in October 2006, and took over the project in March 2007 after **qurlix's** departure from the community. He released a small update, Version 1.3 in April, largely to address compatibility issues between the December 2006 NAM release and RHW Version 1.2, something which the unreleased Version 1.7 was originally intended to fix. With the release of Version 1.3b in June 2007, the RHW became an official NAM Team project.

- **Version 2**

For the Version 2.0 release, the RULs for the mod were completely re-written to change the RHW from a "**side-by-side**" override to a **Starter Piece setup** similar to the then-new Draggable GLR system, coinciding with the incorporation of the **Modular Interchange System (MIS)**, which allowed for true RHW interchanges for the first time. During development on Version 2.0, **Tarkus** expanded the project development team to include texture artists **rickmastfan67** and **Shadow Assassin** (who had provided some graphical work for Version 1.3a and 1.3b), and Big Dig modeller **blahdy**, but all three of them left during 2008. However, **Shadow Assassin** returned in July 2009.

- **Version 3.0**

A new version, Version 3.0, was released on January 14th, 2009. The new release features the long-awaited RHWs, up to the RHW-10 (five lanes per direction), Elevated RHW-4 and MIS Ramps with models by **Swamper77**, **smoncrie**'s RHW-2 and RHW-4 bridges, and over 60 puzzle pieces and numerous draggable additions, including the sought-after MIS-to-OWR transition. It also featured a radically redesigned texture set from **Tarkus** and **ardecila**. Version 3.2 fixed some path files in Version 3.0, coupled with some RUL Fixes included in the March 2009 NAM.

- **Version 4.0 and Version 4.1**

The next version, Version 4.0, was released in May 2010. Several new developers joined Tarkus and Shadow Assassin in 2009, including **Blue Lightning**, **choco**, **jmv1** and **deathtopumpkins**. **mrtnrln** (**MandelSoft**), **toja** and **mtg** came aboard in 2010. The default texture set was revamped again by **Tarkus** for Version 4.0, and blends the "traditional" RHW look with the scaling improvements introduced in the Version 3.0 texture set.

The flagship features of Version 4.0 were Blue Lightning's **FLEXFly (Flexible Flyover)** system, a 90-degree Elevated MIS Ramp curve in helper piece form, allowing for networks to be dragged under it to create a flyover setup, along with the introduction of **Fractional Angle RHW (FARHW)** by Shadow Assassin.

Also included was one new network: the **RHW-8C**, when it was previously thought that it would be too wide. A new **overhang** system for both the RHW-8C and the RHW-6S was implemented. This reduced the footprint of the RHW-6S from two tiles per carriageway to one tile, and what allowed the RHW-8C to be included. This led to the redefinition of the C-networks from being "**Compact**" to "**Combined**", since the once-compact RHW-6C became bigger than the RHW-6S.

After Version 4.0, the project briefly went to a smaller-scale release format, dubbed the "4.x Series". As of the last update of this article, the first, Version 4.1, has been released, incorporating improvements to the FLEXFly system, a new ground-to-elevated MIS Ramp transition, and bugfixes, among other things. **swamp_ig** joined the development group in June 2010 as a modder and modeller, along with **riiga** later in the year. In October 2010, **jondor** released a mod to allow RHW systems to appear on the Regional Transport View, a feat long deemed impossible.

• **Version 5.0**

The release that was originally supposed to be Version 4.2 was later renamed Version 5.0 because of the substantial amount of content added over its yearlong development cycle. This included another revamp of the default textures, the **Flexible Single-Point Urban Interchange (FlexSPUI)**, greatly improved functionality for wider RHWs, the introduction of the **Double-Decker RHW (DDRHW)**, reorganisation and renaming of the Ramp Interfaces as initialised by **Ganaram**, and numerous new cosmetic pieces and ramp interfaces.

Newer networks were included as well, such as the long-awaited RHW-3, ERHW-2, ERHW-6S, and ERHW-6C.

• **NAM 31**

While the initial plans after Version 5.0 included a 5.x-series of releases, a couple of major decisions by the NAM Team have changed those plans. The first of these is the switch away from the so-called "**Modular NAM**" and "**Component Plugin**" paradigm to a "**Monolithic NAM**". As a result, the RHW, along with every other NAM plugin, has ceased to exist as separate plugin and now exists as a part of the NAM itself.

In addition, the NAM Team determined that the prior RUL/IID structure of the RHW was hampering development efforts, and as such, a massive reorganization of the "under the hood" aspects of the mod were initiated, nicknamed **Project 0E**, and then renamed **Project 57**, and finally **Project 57 Mark II**, named after the new IID range, 0x57#####, that RHW now takes up. The vast renaming was due to complications with using the 0x0E##### range (the elevated RHW models would show up on agricultural zones) and due to new decisions regarding how to rotate the crossing/overpass tiles.

These efforts entailed a complete rewrite and ultra-stabilisation of the RHW's RUL-2 code, with the intention of making the RHW future-ready so that it can support many new features and new interchange possibilities.

Many of these features included new Flex items, such as **FlexRamps** and **Flex Transitions**, additional **FlexCurves** and **FlexFlys**, the **Multi-Height System**, dragable **RHW-RHW overpasses**, and **Three-**

Level Overpasses.

The fairly-neglected **Readme** file and the somewhat disorganised **FAQ** have also been rewritten from the ground-up and consolidated into a comprehensive **User's Manual** to provide as much information to the users as possible.

- [Changelog](#)
- [Features added in NAM 31](#)
 - Further refining to the Version 5 textures.
 - Further refining to the diagonal T-crossings, as well as a new 6-way RHW-2 crossing.
 - Chevrons added to the Ramp Interfaces to differentiate between onramps and offramps.
 - Multi-height system for all networks.
 - A vast RUL-2 overhaul to improve stability and IID assignment
 - Remodelled curves and diagonals for wider RHW networks
 - MIS Boomerang Bend fixed.
 - New bridges for RHW-4, RHW-6S, RHW-8S and RHW-10S.
 - FlexRamp system, allowing a more simple to use and flexible ramp system and de-cluttering the ramp interfaces menu.
 - FlexTransitions, allowing a more simple to use and flexible height transition system and de-cluttering the Transitions menu.
 - 112 new Cosmetic Pieces.
 - Support for Project Symphony.
 - Additional FARHW items
 - FAMIS curves
 - Dual FARHW-4 pieces
 - Additional FARHW ramps (C1, F1, F2)
 - Fully draggable diagonal overpasses, and the removal of the puzzle-based overpass pieces.
 - 5x5 FlexFlys and FlexCurves for both RHW-4 and MIS.
 - Three-Level Overpasses.
- [Features added in Version 5.0](#)

- New "V5-Spec" texture set, with improved scaling and aesthetics.
- New networks--in addition to the Double-Decker RHW-4 (DDRHW-4), the RHW-3, Elevated RHW-2, Elevated RHW-6S and Elevated RHW-6C have been added.
- FlexSPUI system, allowing for a flexible, overrideable Single-Point Urban Interchange system that can be elevated.
- RHW Regional Transport View Mod by jondor added, allowing RHW networks to appear on the Regional Transport View.
- Fractional Angle RHW (FARHW) system expanded to include FARHW-6C, and numerous new transitions and exit/entrance ramps.
- Basic, stable draggable diagonal and curving functionality added to the RHW-6S, 6C, 8S, 8C and 10S. New RHW-3, ERHW-2 and DDRHW-4 networks also support limited diagonal functionality. (ERHW-6S and ERHW-6C cannot yet curve or go diagonal.) Please Note: If you have built any RHW-6C diagonals with Version 4.0 or 4.1, you will need to rebuild them.
- New, simpler ramp interface nomenclature system, coupled with a number of new ramps.
- Draggable Ramp Interface (DRI) functionality added to RHW-6S and RHW-8C networks.
- Additional functionality for FLEXFly.
- Many new cosmetic pieces, allowing you to better control the look and realism factor on even more RHW networks.
- DDRHW-4 plain bridge added.
- Improved stability and pathing.

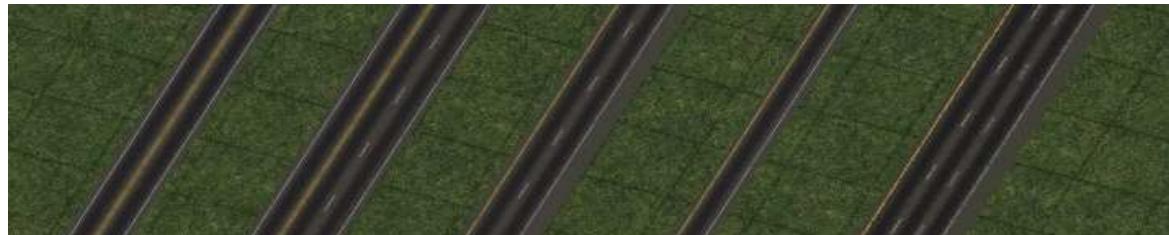
Features added in Version 4.1

- Numerous improvements to the Neighbour Connector pieces, including the elimination of the unnecessary arrows and the "Eastside" placement issues on multi-tile Neighbour Connectors.
- IMPORTANT! As the fix for the "Eastside" issue required reorienting the puzzle piece, you will need to rebuild any and all RHW-6C, RHW-8S or RHW-10 Neighbour Connections.
- Several pathing issues fixed.
- Textures reprocessed to improve quality, particularly for Zoom 3.
- Wealth-level issues fixed on several ramp interface pieces.
- Numerous improvements to FLEXFly system, including increased stability and one additional piece (all found under the RHW Curves TAB Loop)
- Sharp 90-degree draggable curve added to EMIS network.
- New Curved Ground-to-Elevated MIS Transition pieces added.

- The RHW-6S now has a higher capacity than the RHW-4.
 - The Elevated RHW-4 and MIS networks now have draggable orthogonal-orthogonal crossings over RHW-6S, RHW-6C, RHW-8S and RHW-10.
 - Universal Lot Editor Textures and Path Files added to support third-party RHW-related Lots.
 - ABEP removed. (Easter egg)
- **Features added in Version 4.0**
- New FLEXFly (FLEXibleFLYOver) system by Blue Lightning added, allowing for elevated flyover ramps. For more info, see [here](#).
 - New Draggable Ramp Interfaces (DRIs), allowing for easier construction of interchanges. For more info, see [here](#).
 - Greatly improved Neighbour Connection functionality, with the addition of new Neighbour Connector Puzzle Pieces. For more info, see [here](#).
 - RHW-8C (compact) network added, occupying 3 tiles with a slight overhang on either side.
 - RHW-6S converted from a 4-tile network to a 2-tile network with overhanging models.
 - Fractional Angle RHW (FARHW) pieces added, allowing for fractional angle RHW-2, RHW-4, RHW-6S and MIS Ramps.
 - Wide-Radius Curves added for RHW-2 and MIS networks.
 - Improvements to RHW-6S, 6C and RHW-8 diagonal functionality.
 - New puzzle pieces added to allow for construction of Single-Point Urban Interchanges (SPUIs) and the Diverging Diamond Interchange (DDIs). For more info, see [here](#).
 - Diagonal Y-Splitters added to the MIS Ramps.
 - Improved diagonal functionality for RHW-4, ERHW-4 and EMIS, including new intersections.
 - New default North American texture set, blending the traditional "RHW look" with the scaling improvements introduced in version 3.0.
 - Numerous new ramp interface and transition pieces.
 - New diagonal overpass puzzle pieces for the ERHW-4 and EMIS.
 - FLUPs underpass system compatibility.
 - New cosmetic pieces, allowing finer control of the look and feel of your RHW networks.
 - New filler pieces for all networks, allowing more flexibility in tight spaces.

- **Functionality, Networks, and Network Types**

The **RHW network** is based off of the only **unused network** left in the game's files. Its base network (RHW-2) is a 1-tile network and is the only such **Highway-type Network** which is particularly conducive to producing **Override Networks**.



Networks shown above, from left to right: RHW-2, RHW-3, RHW-4, MIS, RHW-6S. Networks shown below, from left to right: RHW-8S, RHW-10S, RHW-6C, RHW-8C.

above, from left to right: RHW-2, RHW-3, RHW-4, MIS, RHW-6S. Networks shown below, from left to right: RHW-8S, RHW-10S, RHW-6C, RHW-8C.



Since it's a **Highway-type Network**, it does not allow access to RCI Zones, and cannot be made to allow for zoning access; this is a hardcoded feature. Additionally, due to its Highway status, most RHW networks are not designed to create at-grade crossings, although there are a few that can. Attempting to create at-grade crossings with wider RHWs will result in a **degenerate intersection**.



Like the Street Network, RHW can be bulldozed using the **dezone** tool. Additionally, this network also has the **Autoconnect** feature. Refer to **A Note about Autoconnect** to see how to avoid it.

- **RHW-2**



RHW-2 The **RHW-2** network is the base network that is used for all RHW networks, and is the only RHW network that doesn't require a starter. It is a 1-tile, 2-lane, 2-way network, much like the Road network, but with a higher capacity and speed.

This network can create at-grade crossings with almost every other network.

- **RHW-3**

The **RHW-3** is one of many Override Networks based off of the base RHW-2 network. It is a two-way network with two lanes going in one direction and one lane going in the other direction, and can be thought of as the RHW equivalent of the Network Widening Mod's 3-lane Asymmetrical Road (ARD-3).

This network can create at-grade crossings with certain networks.

- **RHW-4**

Among the first networks to be developed, **RHW-4** is the first real highway to be created using the RHW itself. The RHW-4 itself is a single-tile two-lane one-way network. It is known as the RHW-4 because the full width of both directions is 4 lanes spread over 2 tiles. Because it is based on a 1-tile network, the two halves of a full RHW-4 do not need to be adjacent, and can be of any width apart.

This network can create at-grade crossings with certain networks.

- **MIS**

The **MIS Ramp**, also called **MIS Network** or just **MIS**, is a network designed for interchanging traffic between any two RHW networks, or between an RHW network and a non-RHW network. This network is a single-lane, one-way network and is the backbone for designing custom interchanges.

Because of its importance with interchanging traffic, this network can create at-grade crossings with almost every other network.

- **S-type Networks**

By definition, an **S-network** (separable) is a network whose median can be of a variable width. All S-networks are progressively wider versions of the RHW-4, starting with RHW-6S. The following network widths are currently released:

- **RHW-6S**: Single-tile network with overhang, 3 lanes per side, 6 for Dual
- **RHW-8S**: Two-tile network, 4 lanes per side, 8 for Dual
- **RHW-10S**: Two-tile network, 5 lanes per side, 10 for Dual

Except for the RHW-6S, which has a smaller footprint and capacity, all S-type networks have the same capacity and width. The only difference between each network is the lane count. None of the S-type networks can create at-grade crossings.

- **C-type Networks**

By definition, a **C-network** (combined) is a network with a fixed-width median. The median, as with the two innermost lanes, is centred upon one tile. As with all S-networks, all C-networks are progressively wider versions of the RHW-4, starting with RHW-6C. The following network widths are currently released:

- **RHW-6C:** Triple-tile network, 3 lanes per direction of travel, 6 lanes total
- **RHW-8C:** Triple-tile network, 4 lanes per direction of travel, 8 lanes total

All C-type networks have the same width and capacity. The only difference between each network is the lane count. An asymmetrical “**RHW-7C**” (Three lanes on one side and four lanes on the other side) can also be created. None of the C-type networks can create at-grade crossings.

- **Double Decker RHWs (DDRHWs)**



DDRHWs are networks where two RHWs going in opposite directions are stacked upon each other, cutting the footprint by half. DDRHWs are elevated to go over obstacles, with its lower deck being 15 meters off the ground, and with the upper deck being 22.5 meters off the ground.

The following network width is currently released:

- **DDRHW-4** (Single-tile network)

This network can now be drawn by the RHW (unlike previous releases) but this does lead to a lower capacity than you expect it to have (only a 25% increase from the RHW-2 capacity instead of 100%).

- **Elevated RHWs and the Multi-Height System**



The **Multi-Height System** is an extension of the RHW networks that allows for the creation of elevated RHWs of varying height levels. This enables the ability for RHW to pass over and under most networks, including other elevated RHWs.

All RHW networks have at least two elevated counterparts, each height level differing by 7.5 meters,

starting from the ground (0 meters, L0), and up to L4 (30 meters).

The following height levels are included:

- **L1** (7.5 meters): All networks have an L1 version.
- **L2** (15 meters): All networks have an L2 version.
- **L3** (22.5 meters): Only MIS, RHW-4, and RHW-6S have an L3 version.
- **L4** (30 meters): Only MIS, RHW-4, and RHW-6S have an L4 version.

Only a few of these networks, RHW-2, MIS, can create at-grade crossings with networks of the same height level.

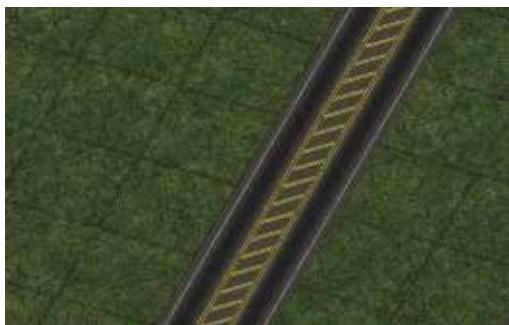
• **Other Networks**

Other RHW networks exist in the RHW, but have very limited function compared to most other networks and cannot be used as full-fledged networks, and have very specialised usage.

• **WRHW-2**

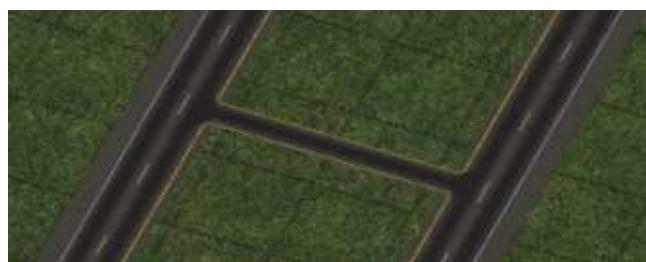
WRHW-2 (Wide RHW-2) is the RHW equivalent of the Network Widening Mod's (NWM) AVE-2. It is the only RHW network that is puzzle-based. It exists as an **Orthogonal Filler Piece**, and can be found under the Filler Pieces Button. The WRHW-2 is usually used between different transitions between the RHW-3 and sometimes RHW-2 too.

This network's capacity is identical to the RHW-2.



• **RHW-4 Emergency Lanes**

The **RHW-4 Emergency Lanes** can be dragged out perpendicularly from the RHW-4 using the Street Network. Its purpose is to create a **U-turn pocket** for the RHW-4 network.



- **Possible Networks to be Added**

There are plans to add the following networks in a future release:

- **RHW-12S and RHW-10C**

These are the widest possible networks that can fit within the two-tile and three-tile footprints, respectively. Like the RHW-6S, these networks rely on an **overhang** to display the outer shoulders, but their paths still lie well behind the overhang.

- **Additional DDRHWS**

Currently, the only DDRHW that is currently is the DDRHW-8, but special consideration regarding implementing additional DDRHWS, such as pathing and ramp interfaces, still need to be accounted for.

- **Ultra-Wide Networks**

These networks exceed the footprint of the standard two-tile and three-tile widths of the S and C networks. Due to geometrical complications and general rarity with these networks in real-life, they are planned to be orthogonal-only, limited to L0 and L1, and are only to be used for merge lanes. Special consideration must be taken into account before these networks can be added.

- **Networks that Cannot be Added**

Due to game limitations or design decisions, the following networks will not be added:

- **Same-direction DDRHWS**

Since paths are seen by the game as being two-dimensional, any sort of height offset is ignored. Because of this, any attempt to create **Same-Direction DDRHWS** is not possible and any attempt to do so will result in dysfunctional traffic behaviour, mainly in the form of traffic entering the lower deck exiting from the top deck (**deck jumping**). This also includes elevated RHWS stacked on top of ground-level RHWS. For this reason, Same-direction DDRHWS will not be added.

- **RHW Dual Networking involving Rail-type Networks**

Due to the number of pieces required to create **RHW Dual Networking** involving **Rail-type Networks**, such as RHW over GLR, and the number of corresponding Ramp Interfaces needed, Dual Networking will not be added for RHW.

- **RHW Dual Networking involving non-Rail Networks**

Any sort of **RHW Dual Networking** involving **non-Rail Networks**, such as RHW Over Avenue, will encounter the same issues as Same-Direction DDRHWS and cannot be added for this reason.

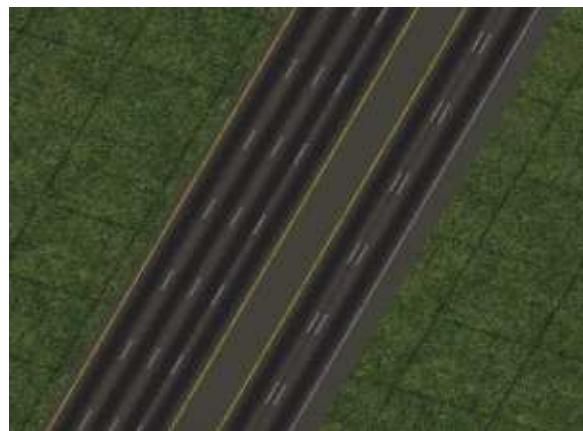
Even if the two decks are in opposite directions, the next two problems become capacity and deck jumping. One, there would need to be a network with the total capacity of both Road and RHW combined and no such network exists, and two, since the lower deck would provide zoning access, the upper deck would also have zoning access, which is unrealistic for an elevated highway.

- **A note about Network Modularity, Pathing, and Capacity**

Wider RHW networks rely on **modular subsections** to achieve the full width. The two-tile S-networks are actually two networks: The **shared inner lanes** and the **outer lanes**. The RHW-8S and RHW-10S share the same inner lane section. Similarly, the C-networks are also two networks: The **shared median lanes** and the **outer lanes**. The RHW-6C and RHW-8C share the same median section.

Because of the modular nature of these wider networks, in order for these subsections to function properly as a whole, **Crossover Paths** are added to ensure proper traffic usage across the whole network, and not just one of its subsections.

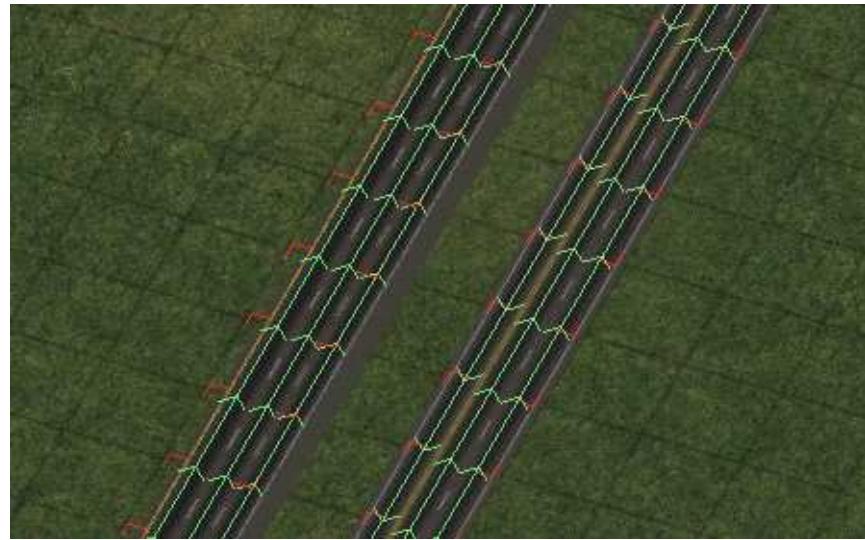
NOTE: Mixing these subsections to try to create “nonsensical” networks is not advised, since it is not intended to use these networks in such a fashion. The inner lanes of the S and C networks are only meant to be coupled with their respective outer lane counterparts. **A future update may prevent these “nonsensical” setups from being built.**



There are also additional paths found on the **RHW-6S** and **RHW-3**. These paths, called **Distilled Intersection Paths** (DIPs), are put there on purpose with the intention for these networks to have a greater capacity than just the base RHW-2 network. Since an intersection is defined by the game as a tile with paths going in or out at least three of the sides, it's fairly easy to trick the RHW-6S and RHW-3 into being intersections.

Both crossover paths and DIPs can be made visible through the use of the **DrawPaths** cheat using the **Extra Cheats DLL**, with the Crossover Paths appearing as an X-like formation of paths, and the DIPs appearing as a set of flashing red arrowheads.





With regards to the Distilled Intersection Paths, its capacity-boosting ability is dictated by a property in the Traffic Simulator called the **Intersection and Turn Capacity Effect** (ITCE). This property dictates the capacity of all intersections by lowering or raising the corresponding base network's capacity up or down by a defined percentage.

All five types of the **NAM Traffic Simulators** have an ITCE Value of 125%, boosting the capacity of intersections by **25%** of the corresponding base network's capacity. Additionally, due to how the Crossover Paths are set up, networks with crossover paths also exhibit this capacity boost.

NOTE: Other traffic simulators, such as those based off of the **default Maxis Traffic Simulator**, may have an ITCE value **less than 100%**, lowering the capacity of the RHW-3, RHW-6S, and all wider RHWS to below the base capacity. Because of this, it is recommend to use instead one of the NAM Traffic Simulators.

- **Overview of Capacities, Heights, and Footprints**

Network Type	Network Width	Classic	Low	Medium	High	Ultra	Can make crossings?	Heights
RHW-2**	1	2700	6000	10000	1500 0	30000	Yes, Limited for elevated	L0, L1, L2
MIS**	1	2700	6000	10000	1500 0	30000	Yes, Limited for elevated	L0, L1, L2, L3, L4
RHW-3**	1	3375	7500	12500	1875 0	37500	Limited, No for elevated	L0, L1, L2
RHW-4 (Single*)	1	2700	6000	10000	1500 0	30000	Limited, No for elevated	L0, L1, L2, L3, L4

RHW-6S (Single*)	1 with overhang	3375	7500	12500	1875 0	37500	No	L0, L1, L2, L3,
RHW-8S (Single*)	2	6750	1500 0	25000	3750 0	75000	No	L0, L1, L2
RHW-10S (Single*)	2	6750	1500 0	25000	3750 0	75000	No	L0, L1, L2
RHW-4 (Dual*)	2	5400	1200 0	20000	3000 0	60000	-	-
RHW-6S (Dual*)	2 with overhang	6750	1500 0	25000	3750 0	75000	-	-
RHW-8S (Dual*)	4	13500	3000 0	50000	7500 0	15000 0	-	-
RHW-10S (Dual*)	4	13500	3000 0	50000	7500 0	15000 0	-	-
RHW-6C**	3	10125	2250 0	37500	5625 0	11250 0	No	L0, L1, L2
RHW-8C**	3	10125	2250 0	37500	5625 0	11250 0	No	L0, L1, L2
DDRHW-4**	1	?	?	?	?	?	-	L2/L3

* Single denotes one single section of a specific network, whereas dual denotes two of the same network placed together. This only applies with RHW-4 and the S-networks.

** RHW-2, RHW-3, MIS, C-networks, and DDRHWS are shown with their "full width" capacities.

- **Tunnels and Bridges**

- **Tunnels**

While it is possible to actually build what appears to be a tunnel with the RHW, and the Maxis default slope settings for the network will allow it, the tunnel will show up missing models and will not function. Even if proper models and paths are applied, the tunnel cannot be made to function due to **hardcoding**. There is no way to add in additional network tunnels the same way that override networks or bridges can be added in.

As far as tunnel solutions go, there are **FLUP entrances** available for the RHW-2 network. The AVE-4 and OWR FLUP entrances pieces can be used for RHW-4. There are also corresponding FLUP pieces to go under the various RHW widths, and can be found under the **Road/RHW Interface Button**. This requires the use of the FLUPs found in the **Roads Menu** to cross under other networks.



For traditional tunnel functionality, you'll need to use another network as a workaround. In the case of RHW-4, the **Avenue** or **One-way Road** tunnels can be a viable option, and with RHW-2, the **Road tunnels**. Alternatively, you can use one of **buddybud's** underpass lots or **blahdy's** Boston Big Dig (BBD) lots, which utilize the Subway network.

NOTE: If you have **Project Symphony** installed, you can also use the modified Maxis Highway tunnels as a substitute for an RHW-4 tunnel.



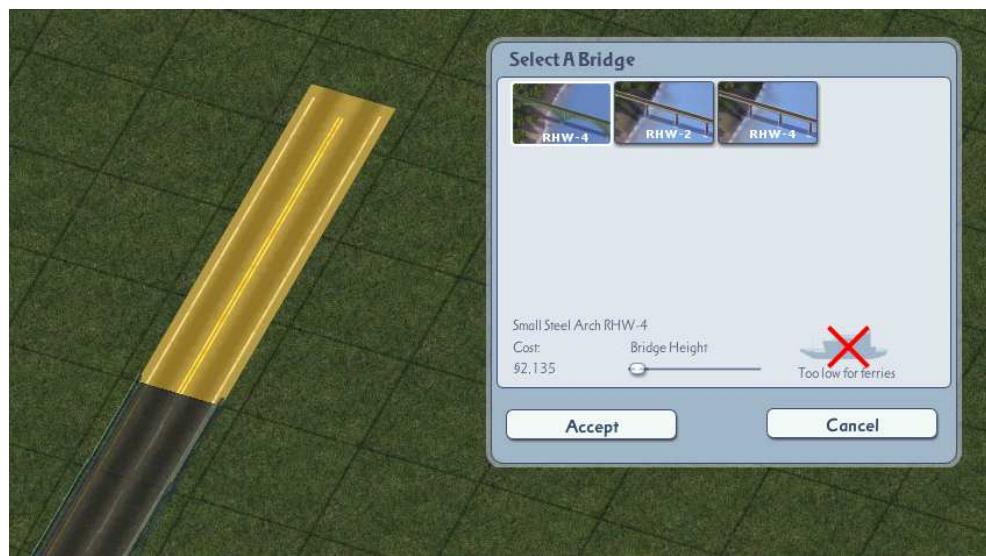
- **Bridges**

Fortunately, bridges have a better fate.



The RHW contains a basic set of bridges for most single-tile networks (RHW-2, 3, 4, MIS, and 6S), which are dragged using the **RHW tool**. A set of bridges for the S-networks (8S, 10S) have also been added. The wider bridges use the **Maxis Highway** (MHW) network to create two-tile bridges and are found under Maxis Highway bridge menu when dragging an MHW bridge. Similarly, there are also dual RHW-4 and dual RHW-6S bridges which are also MHW-based.

For all one-way bridges, you must drag them in the direction that you want it to be facing. For RHW-3, you must drag the bridge in the direction that the two-lane half should be going.



There is no way to make a bridge for any of the C-networks without using a DBE-style solution (Diagonal Bridge Enabler).

A comprehensive list of bridges can be found under **List of Items**.

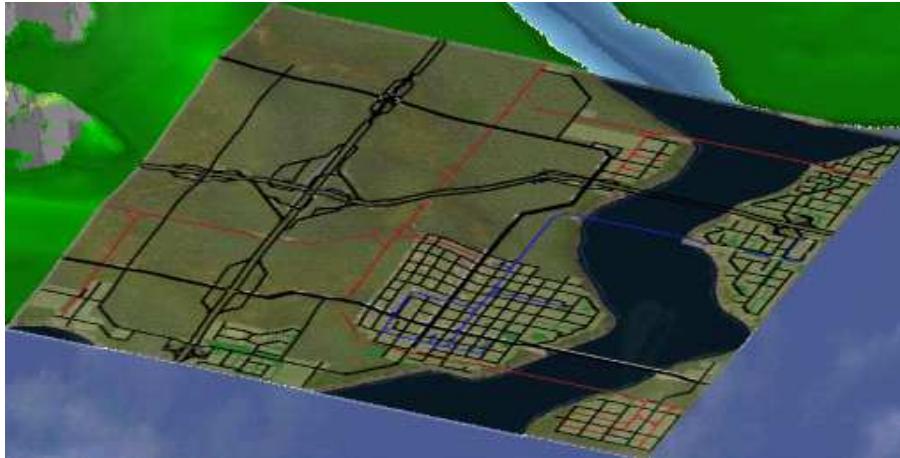
- A Note Regarding the Regional Transportation View



RHW Version 5.0 first included **jondor's** Regional Transportation View Mod, which allows RHW to be visible on the Regional Transportation View. This mod is installed by default, but the option to install this can be switched off in the installer, or it can be removed manually.

It also contains an updated and expanded map legend to reflect the new network colours (as shown above) as well as the addition of Monorail as a separate colour from El-Rail/GLR. This mod is NOT compatible with any other Regional Transport Map mods.

There is one requirement for the mod to function correctly: You must activate at least one **dataview** in-game before saving for the game to render the map correctly. Otherwise, the colours for Roads will render incorrectly.



After installation, each city tile must be opened and saved (after opening any dataview) in order to update the region map. Similarly when uninstalling the mod, each city tile must be resaved to update the region map.

- Puzzle-based Items

Puzzle-based items are static items that can be used for different purposes. These items can be found under the **Highways Menu**. In order to navigate through the different types of pieces, you must press the **TAB** key, and to go back, press **SHIFT+TAB**. To rotate a selected puzzle piece, press the **Home** and **End** keys. If you are on a **Macbook**, then this will be the **FN+Left Arrow** and **FN+Right Arrow** keys. A comprehensive list of what items are included can be found in [List of Items](#).

The current RHW contains the following Puzzle-based items:

-  [Ramp Interfaces and the Modular Interchange System](#)

 RHW's most distinguishing feature is the ability to create **custom interchanges**. Since making prefabs takes a lot of work and are incredibly inflexible, and that real-life interchanges can be incredibly massive (exceeding the 16x16 tile maximum for puzzle pieces), there instead exists a set of ramp interfaces designed to complement the MIS network. Both of these form the basis of what's called the **Modular Interchange System**. It is essentially a set of interchange pieces which can be assembled in an infinite number of combinations to create any type of interchange.

Many of these pieces have **starters** that allow for a network to be dragged out of a ramp piece itself. Other pieces may have a stub that allows for **RHW-2** to be dragged out, though this may have to be overridden afterwards, and there may be pieces that have no stub or starter at all (starterless) and have to be connected using **Filler Pieces**. These pieces are found under the **Ramps Button**.

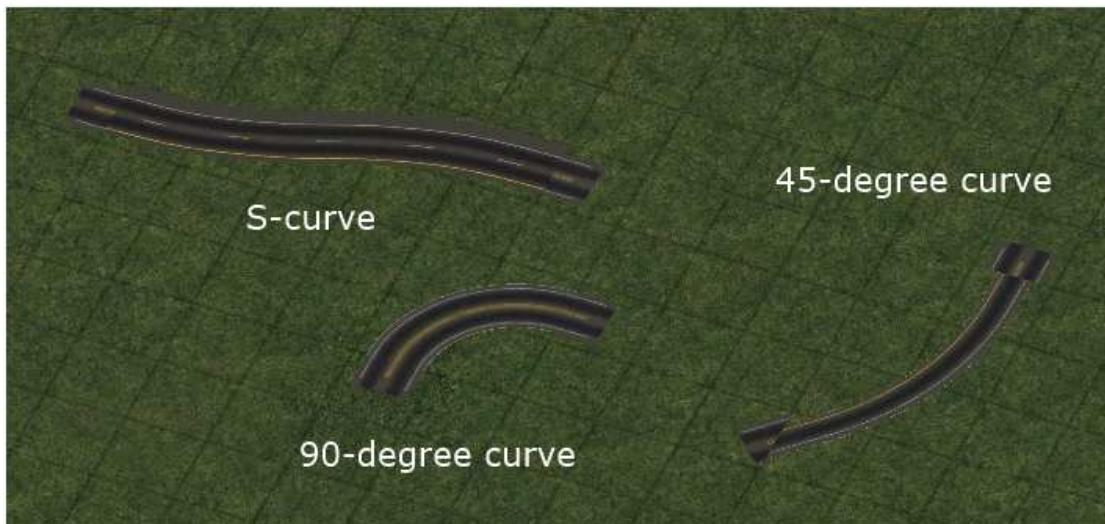
An outline of the Ramp Types can be found in the **Tips, Tricks, and Tutorials** section.



- [Smooth / Wide Radius Curves \(WRCs\)](#)



Wide Radius Curves allow for a smoother and more realistic turn-radius, enhancing the look and feel of curving networks. These pieces are intended to be placed before the networks are dragged, though certain pieces may be placed on top of an already-drawn network, provided if the network is drawn properly. There are three main shapes of Curves, named after their shape or angle: **S-curves**, **45-degree curves**, and **90-degree curves**. These pieces are found under the **Curves Button**.



Only the RHW-4, RHW-2, and MIS networks have curves; no other network has curve pieces. However, with multi-tile networks (RHW-8S, RHW-6C, and wider), this isn't an immediate issue, as their naturally-drawn bends have an already-wide turn radius.



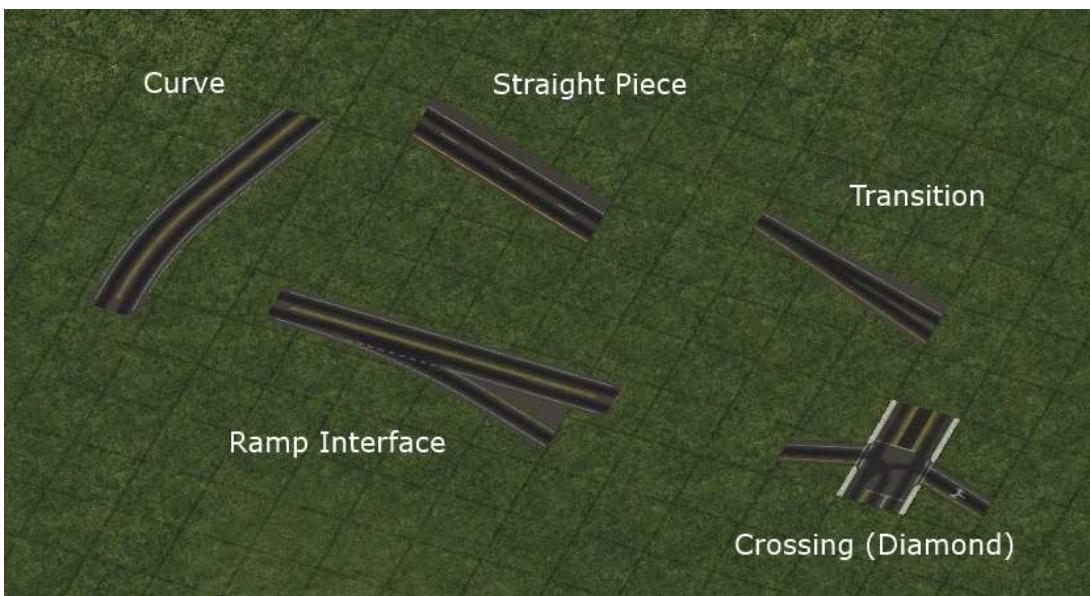
- **Fractional-Angle Networking (FARHW)**



Fractional-Angle Networking exists for RHW in the form of **Fractional-Angle RHW**, or FARHW. These pieces are neither orthogonal nor diagonal. There is currently one type of Fractional-Angle Networking available for RHW: **FA-3**, in which the RHW is at either an 18.4 or 71.6 degree angle with respect to the orthogonal grid.

FA-3 networks travel “sideways” one tile for every three tiles it moves forward. This creates a line that doesn’t fall in place with the Orthogonal grid. Additionally, term “**Fractional-Angle**” comes from the ratio of the “sideways” length to the “forward” length. This creates a **fraction** (1/3), whose arctangent is 18.4 degrees, and whose complement is 71.6 degrees.

FARHW can be used for extremely gentle curves, special ramp setups, special interchanges, and for going against the orthogonal-diagonal grid in general. There are five main types of FARHW pieces: **Straight Pieces**, **Curves**, **Ramp Interfaces**, **Transitions**, and **Crossings**. These pieces are found under the following buttons: **FARHW**, **FA Curves**, **FA Ramps**, and **FA Intersections**.



- **Transitions**



Transitions allow you to switch between two different heights or widths of RHW. There are three types of Transitions: **Width Transitions**, **Height Transitions** (or **Ramp-styled**) **Transitions**, and **OnSlope Transitions**.

Width Transitions widen or narrow a network one lane at a time for each direction of travel. These transitions are called **Type A** Transitions. There are also Types B, C, and D, which are cosmetic variations. There are other transitions that can transition from an S-network to a C-network while still retaining the lane count.

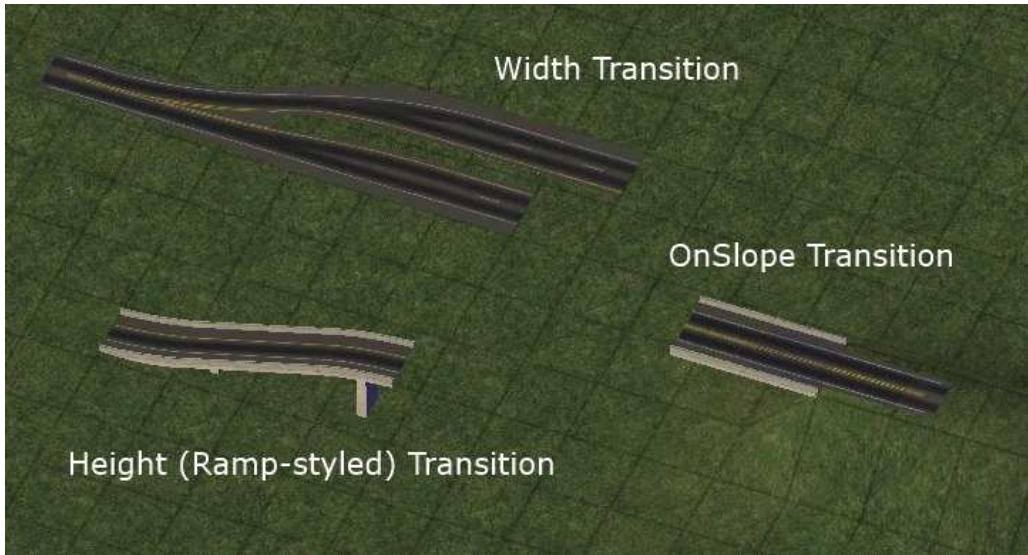
Height Transitions and **OnSlope Transitions** typically will switch between two different height levels using an inclined ramp. The length of Height Transitions is dependent on how steep or smooth the slope is. This length can be short (Compact) or long (Elongated). The OnSlope Transition's slope is created using an embankment, but the piece itself is only 3 tiles long. There are also **Curved Height Transitions** available.

Height Transitions rely on an inclined ramp to transition between two height levels, and because of its design, it can have another network directly parallel to it. The length of a Height Transition increases for how many height levels it goes up or down. The list below summarises the height changes:

- 1 level: 3 tiles compact, 4 tiles elongated
- 2 levels: 4 tiles compact, 7 tiles elongated
- 3 levels: 5 tiles compact, 10 tiles elongated
- 4 levels: 6 tiles compact, 13 tiles elongated

OnSlope Transitions have to rely on either an earth embankment or a sharp elevation change. If these are used with an embankment, the length of this embankment will depend on what slope mod is installed, though this may be up to twice or three times as long as a Height Transition.

An overview of Transitions can be found in the Tips, Tricks, and Tutorials section. Transition pieces are found under the **Transitions Button**.



- **Neighbour Connections (NC)**



Neighbour Connector pieces allow you to properly create neighbour connections for the RHW. In the current version, all multi-tile networks have neighbour connector pieces, and the use of these pieces is mandatory for proper functioning neighbour connections. These pieces are found under the **NC Pieces Button**.

An outline on using NCs is given under the **Tips, Tricks, and Tutorials** section.

- **Fillers**



Fillers can be used on short stretches where there's little stability or when starters don't fit. All RHW heights and widths, except for L0 RHW-2, have orthogonal fillers and diagonal fillers. There are currently no diagonal fillers beyond RHW-4. These pieces are found under the **Fillers Button**.

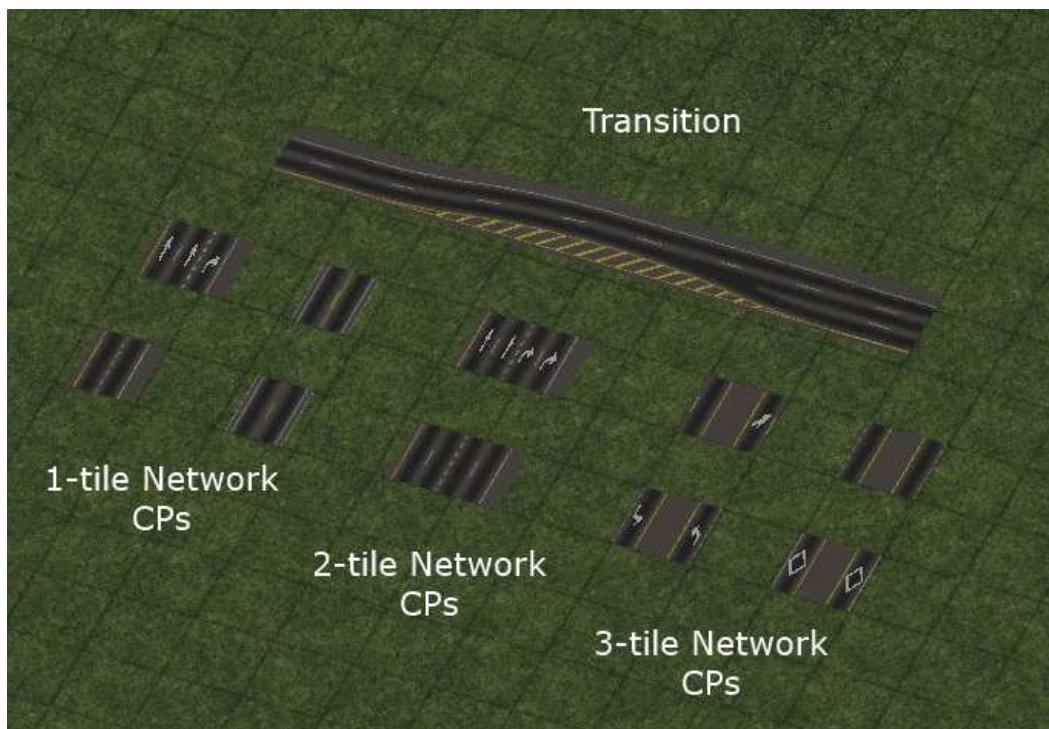
- **Cosmetic Pieces (CP)**



The **Cosmetic Pieces** (CPs) are finishing touches to stretches of RHW. They offer alternate transitions and lane markings in various styles. In the current version, there are almost 200 different cosmetic pieces available for almost all ground networks.

Most CPs have to be placed on top of an existing network. There are different styles of markings to indicate lane separation in various ways, as well as different styles of Transitions. CPs are organised by what network width they're made for: 1-tile networks (e.g. RHW-2, RHW-4) 2-tile networks (e.g. RHW-8S) and 3-tile networks (e.g. RHW-6C). There is also a category for Transitions, Types B, C, and D. These pieces are found under the following buttons: **1-Tile CPs**, **2-Tile CPs**, **3-Tile CPs**, and **CP Transitions**.

These pieces should not be mistaken as TuLEPs, despite the presence of arrows on some of them. Refer to **Highway Customisation** for how to use CPs.



- **RHW Overpass and MIS Crossing Pieces**



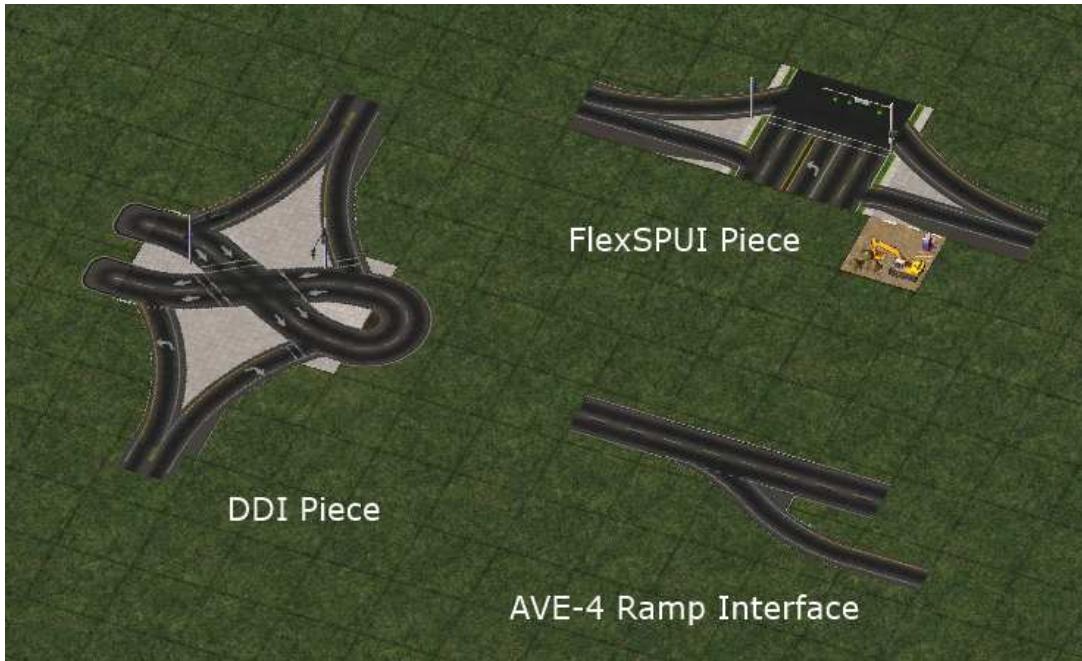
There are other RHW items found outside of the Highways Menu, and found instead under the Roads and Rails Menus. These pieces are designed to interface non-RHW networks with the RHW, primarily as overpasses and, with Road, OWR, and Avenue, crossings with elevated MIS. These pieces are found under the following buttons: **Road/RHW Overpass and Interface Pieces**, **OWR/RHW Overpass and Interface Pieces**, **AVE/RHW Overpass and Interface Pieces**, and **Rail/RHW Overpass Pieces**. The **FLUPs** can be found under the **Road/RHW Button**.



- **Specialised Crossing Pieces (SCPs)**

These pieces are designed to create particular types of crossings, namely Volleyball Interchanges, DDIs, and SPUIs. These pieces are found under the **Specialised Crossing Pieces Button**. **Flex Items** and **non-RHW Ramp Interfaces** may also be found under this menu.

An overview on how to use these pieces can be found under **Interchange Construction Tutorials**.



- **Unimplemented Puzzle-based Items**

There are items that are currently not fully implemented and, due to time constraints or logistical issues, are slated for a future release.

- **Turning-Lane Extension Pieces (TuLEPs)**

Turning-lane Extension Pieces (TuLEPs) are puzzle pieces that add in turn-lanes to certain RHW networks. These turn lanes can be customisable and can be of any length and pattern.

There have been a few proof-of-concept pieces created for RHW, but fully implementing these pieces has yet to be thoroughly worked out.



- **More SCPs**

There are other types of RHW crossings that are planned to be included in future releases.

- **Flex-based, Draggable, and Helper-based Items**

Flex-based and Draggable items are dynamic items that change with their surroundings. They operate similarly to Puzzle Pieces, but instead bear a construction lot/tile that has to be demolished afterwards. These items can be found under the **Highways Menu**, but Draggable items cannot be found anywhere and have to be drawn out. You can look at how to use the following pieces in the **Tips, Tricks, and Tutorials** section. The following items are included in this version of the RHW:

- **Starters**



Though technically not a Puzzle Piece or even a Flex Piece, **Starter Pieces** are placed similarly to both and are used to "seed" the necessary overrides. These pieces are found under the **Starters Button**.

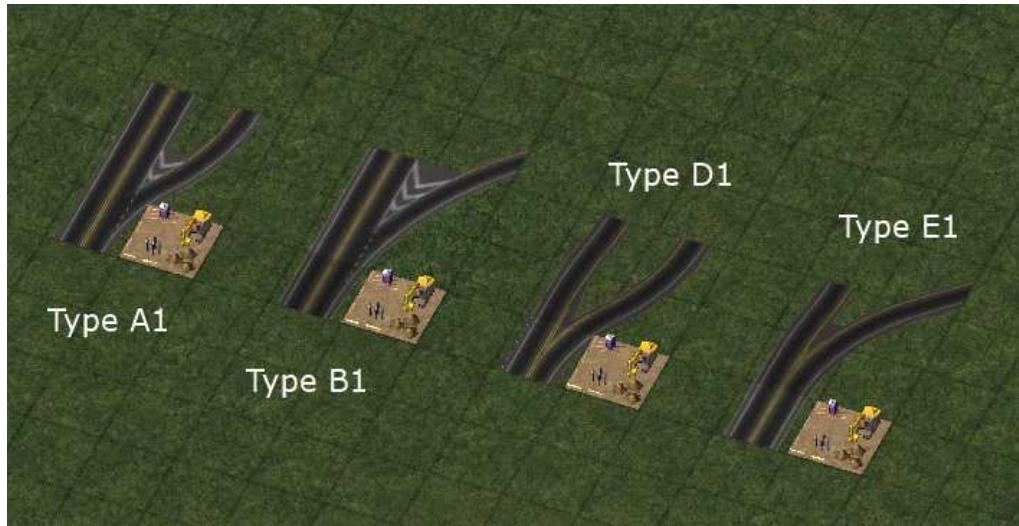


- **Draggable Ramp Interfaces (DRIs) and FlexRamps**



Draggable Ramp Interfaces and **Flex Ramps** are an extension of the original Modular Interchange System. These items are overridable versions of the original puzzle-based Ramp Interfaces and are designed to compact down hundreds of Ramps down to just a small number. These pieces are found under the **FlexRamps Button**.

The following Ramp Types are available as FlexRamps: Type A1, B1, D1 and E1 were not ready and stable for implementation at the moment of release. Only Types A1 and B1 are draggable. A detailed outline of the Ramp Types, as with how to use these items, can be found in **Tips, Tricks, and Tutorials**.



- **FlexFlays and FlexCurves**



Both **FlexFlays** and **FlexCurves** function similarly to puzzle-based Curves, but have the added benefit that networks can be crossed above and below them. These are used for interchanging networks, such as RHW-4 or MIS, to fly over or under other RHWs. Primarily, only a 90-degree (Type A) FlexFly and FlexCurve exist.

These pieces are found under the **FlexFly Button**.



- **FlexTransitions**



Similar to FlexRamps, **FlexTransitions** have the function of the puzzle-based transitions, and are overridable according to what network is dragged into them. There are currently two pieces: the **FlexHeight Transition**, which transitions between two different height levels of RHW, and **FlexOnSlope Transition**, which transitions between two height levels across a one-tile slope.

Both types of Transitions are designed similarly to their puzzle-based counterparts, but are designed with the same intent as FlexRamps: To allow different transitions to be added in using just one piece.

These pieces can be found under the **FlexTransitions Button**.



- **FlexSPUI**



FlexSPUI offers a Single Point Interchange Setup that can vary in height and width, all through just one piece. Currently a **Type A** (single left turn in RHD, or single right turn in LHD) currently exists for the Avenue network, and can be found under the **Specialised Crossing Pieces Button** under the Roads Menu.



- **Tram FlexCrossing Piece**

Running off of the Flex paradigm, RHW can now cross through and over **Tram-related Dual-networking**, particularly Tram-in-Avenue (TIA), Tram-in-Road (TIR), Tram-on-Road (TOR), and Tram-on-Street (TOS), using a single Flex piece. This allows for MIS crossings and RHW overpasses with the Tram networks.



- **Two-Level and Three-Level Overpasses**

Since NAM 31, all of the RHW over RHW overpass puzzle pieces have been removed and have been made draggable instead. Three-level overpasses can also be drawn as well, though this requires more advanced methods.

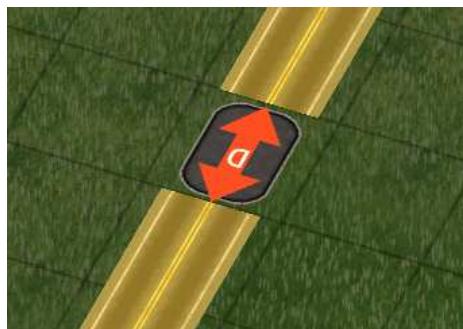
Naturally, RHW can create overpasses with non-RHW networks, and crossings under elevated non-RHW networks.

- **Unimplemented Flex-based Items**

There are items that are currently not fully implemented and, due to time constraints or logistical issues, are slated for a future release.

- **Draggable Transition (DragTrans) or FlexTrans**

The Draggable Transition was experimented with during NAM 30 and NAM 31 development and used a "Disruptor" (a single Road or Street tile that an RHW would be drawn through) to initiate draggable transitions. However, this type of solution may not be suitable for larger transitions, and the implementation itself may be slope-intolerant. An alternate solution would be to use a full-fledged Flex item instead.



- **Draggable or Flex-based FARHW**

The main issue that could potentially get in the way of implementing Draggable FARHW is Autoconnect. Since several of the footprints require the use of a stub-to-stub setup (which is impossible using Autoconnect), draggable FARHW could prove to be cumbersome to use, particularly when wider RHWs are involved. Further testing has to be done to show if Autoconnect is a problem, and if so, FlexFARHW could be an alternate solution.

- **Tips, Tricks, and Tutorials**

Although a number of the RHW's features are intuitive and fairly easy to understand and use, such as curves and FARHW, there are a few features that may be quite advanced or confusing for new users. This section explains how to use several of the RHW's features.

- **How to use Starters**

The principle behind Starters is the same with GLR: A "**False Intersection**" between the desired network, RHW, and another network, such as Road or Elevated Rail, is defined in **RUL-1**, and is expanded when dragged out using override code via**RUL-2**. The starter acts as the "seed" needed to override a base network into a completely different network.



NAM 31 changed how Starters are designed, and they now bear a **construction tile** that has to be destroyed after plopping. RHW can be dragged out of and through the starter, as before.



In order to properly construct an **RHW-4** or an **S-network**, the starters should be placed with the **yellow lines** and the **narrower shoulders** on the inside. This ensures that the two halves of the RHW are going in the correct direction. C-networks are already constructed with the two carriageways conjoined, so they're already in the correct direction.

NOTE: if you use the Euro Textures, there will be no yellow lines; all lines are white in the Euro textured version. In that case, keep an eye on the shoulders. The narrow shoulder should be in the inside and the wider on the outside. Also, some future texture sets may also use yellow lines on the **outside** instead of the inside (Irish-South Africa).



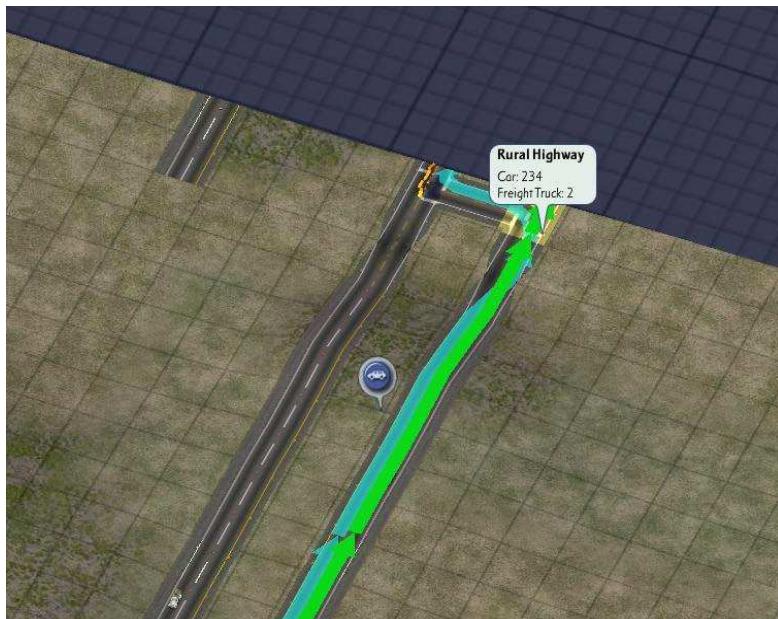
- **A note about starters**

Certain starters, particularly **RHW-4**, **MIS**, and elevated **RHW-6C** starters, are able to be bisected by another RHW perpendicularly through the starter. The bisecting RHW can then be overridden into a different RHW width. This was designed as a way of having an extra degree of stability and compactness for certain setups, particularly for overpasses with RHW and another RHW.

<>

- **How to use the NCs**

Due to the fact that commuters exiting a city have to re-enter the same tile that they exited and that many of the RHW's networks are one-way and therefore lack a re-entry path, the **Neighbour Connection Pieces** were introduced in Version 4.0 as a means of remedying that problem, and to reduce the use of the traditional Loop Connector trick, as shown below.



All RHW Neighbour Connections involving RHW-4 or wider or MIS are **required** to use NC Pieces. Without them, only Freight Trucks, which don't require a return path, will be able to use the RHW. The RHW-2 and RHW-3 networks do not require an NC piece, as both networks already have paths going in and out.

There are two types of pieces involved in RHW Neighbour Connections: **Network Pieces** and the **Invisible Loop Connector**, both of which can be found under the RHW Neighbour Connector Pieces

button.

To properly create an RHW Neighbour Connection, simply drag out an RHW all the way to the city border and **create a connection**. This will establish the initial connection.



Then locate the corresponding **Network Piece**, found under the NC Button, and place it directly on top of the tile bearing the arrows. Be sure to rotate the piece accordingly to line up with the shoulders and lane markings. Do this for each carriageway.



For networks separated by a one-tile gap or larger, such as RHW-4 or other S-networks, place the **Invisible Loop Connector Piece** between the two carriageways. Wider gaps will require more pieces. The Invisible Loop Connectors will appear **invisible** when placed, but will display a "**ghost arrow**" when the **Query tool** is hovered over it. The preview model will also display the arrow. The Invisible Loop Connector should not be placed directly on top of the RHW.



Connections for C-networks are built similarly, except that only one piece is required, since the two carriageways are already joined together.



Neighbour Connections involving a **Multi-RHW setup**, or Collector-Express or Collector-Distributor Setups (multiple RHWs placed side by side going in the same direction) can also be created using the methods outlined above, using the appropriate pieces as needed.



Important notes:

- Unlike the Avenue and MHW networks, the RHW Neighbour Connection arrows will always face out. This issue is unfixable.

- Connections involving one carriageway (one-way connections) are not possible.
- Any two cities connected by the same connection need to have NC Pieces in both cities.
- It is normal to see traffic query arrows to point downwards, and it's also normal to see "spider cars" along the city edge. This is an indicator that the connection is working.

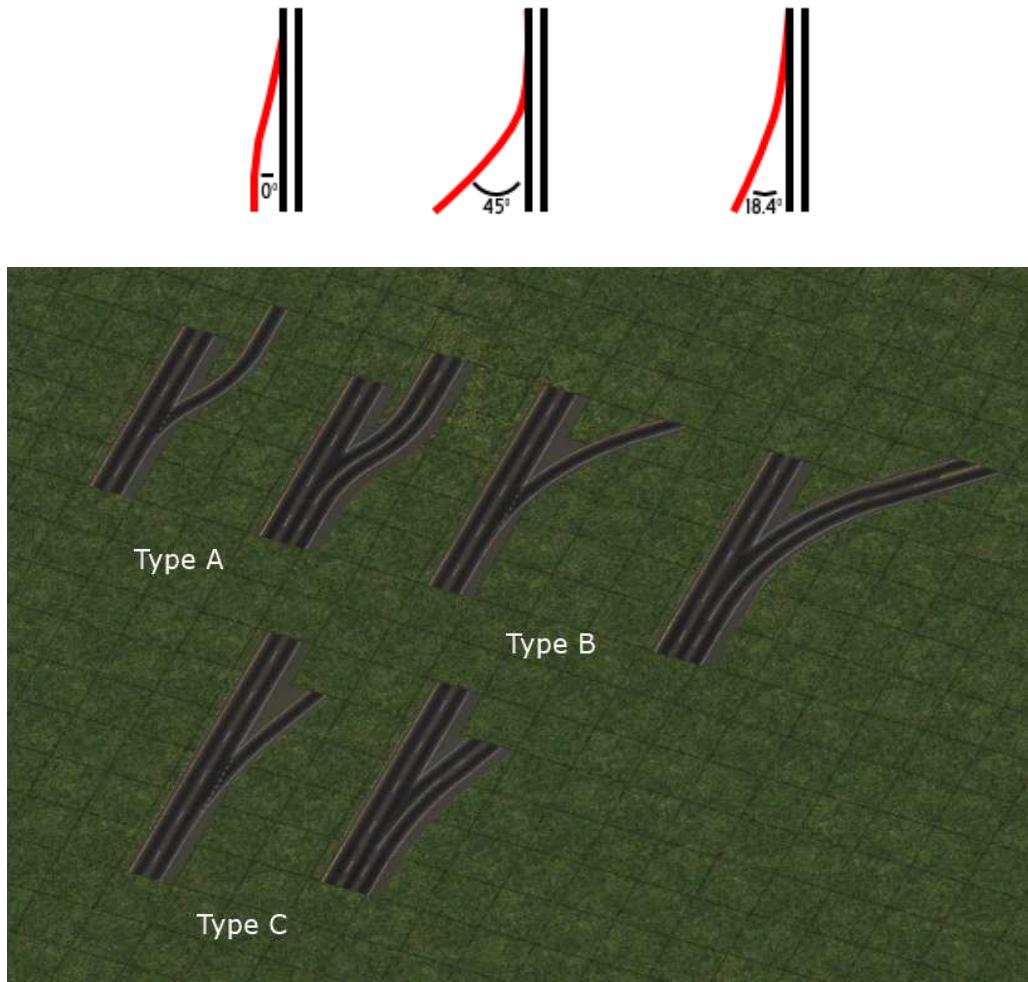
• How to use Ramp Interfaces

There are three ways in which **Ramp Interfaces** are implemented: Using Puzzle Pieces, Draggable Ramp Interfaces, and FlexRamps. All three forms of Ramps share the same purpose: To move interchanging traffic coming on and off between two RHW networks, or between an RHW and non-RHW network.

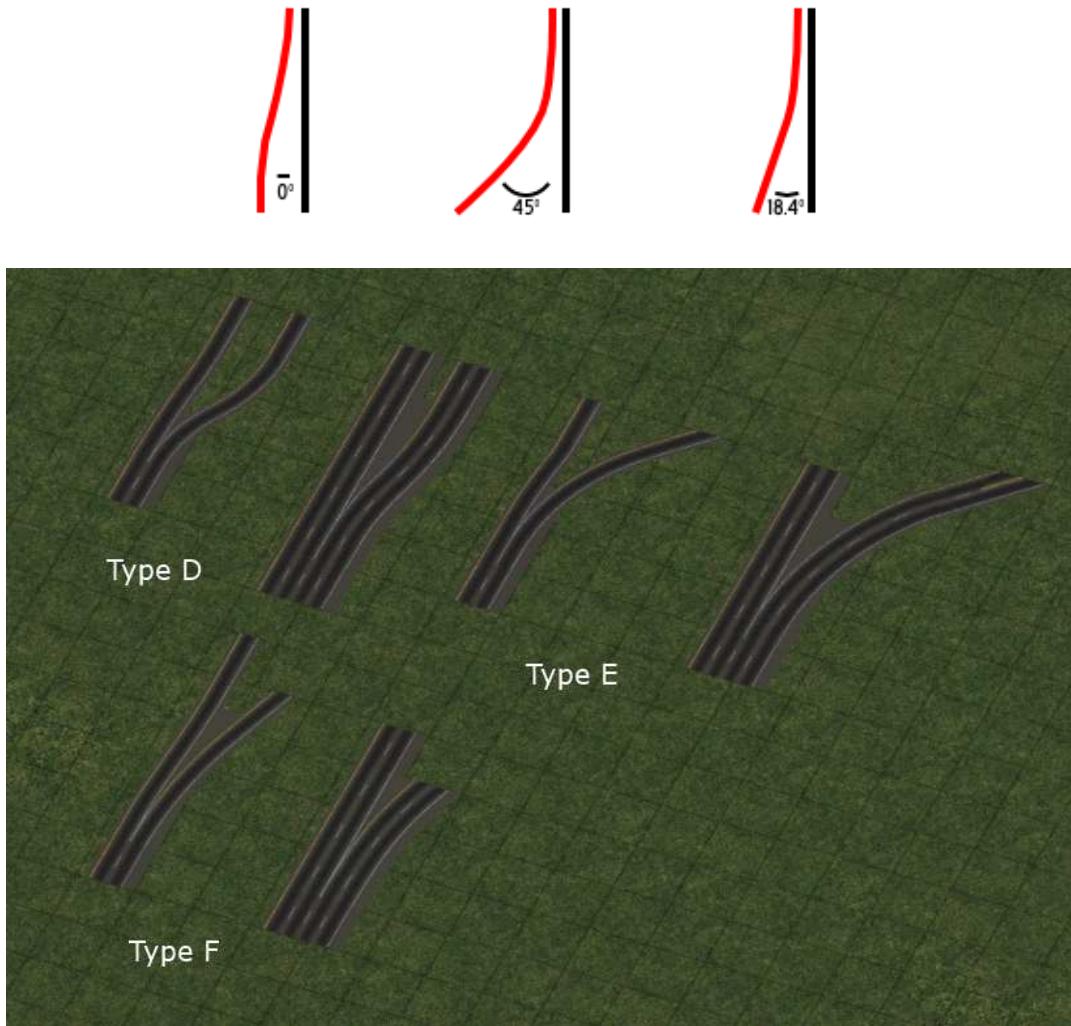
• Understanding Ramp Types

There are six main types of Ramps, each classified by how the lanes "branch" off of the mainline. The main six ramp types are named A through F.

Types A, B, and C is where the innermost lane of the branch is formed from the outermost lane of the mainline RHW. These ramps are used for instantaneous branching or merging, as diagrammed below:



Types D, E, and F is where the branch is directly split off from the mainline RHW. These ramps are used for acceleration or deceleration lanes, or for "splitter" styled ramps, as diagrammed below:



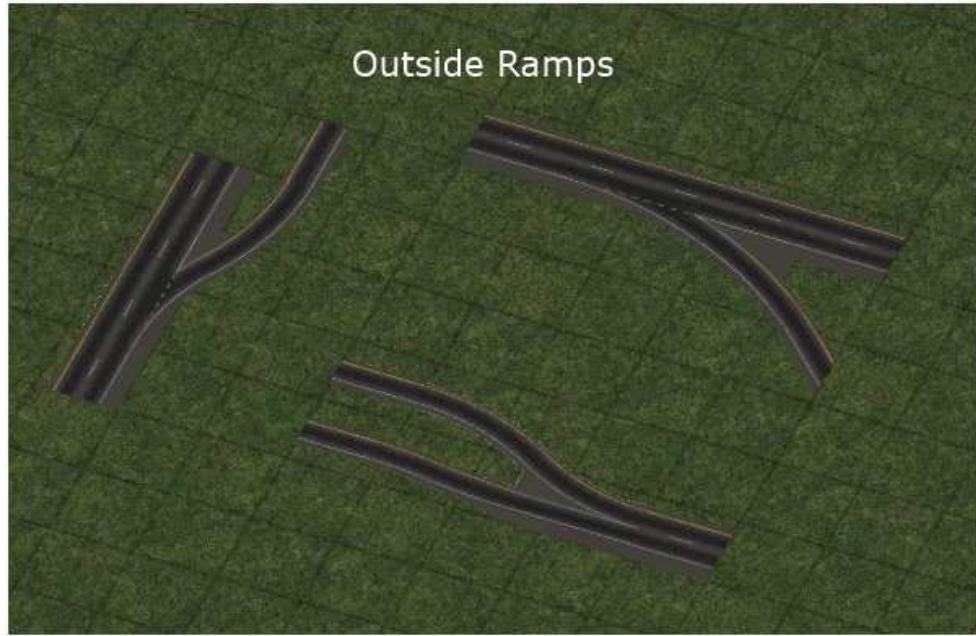
Types A and D have a branch parallel (0 degrees) to the mainline, **Types B and D** have a branch diagonal (45 degrees) from the mainline, and **Types C and F** have a branch at a Fractional-Angle (18.4 degrees) from the mainline.

All six ramp types have a **numeric suffix** which denotes the number of lanes that branch off, ranging from 1 to 3. For example, RHW-4 A1 denotes a ramp in which MIS branches off of the RHW-4 mainline with the RHW-4 retaining all of its lanes, whereas RHW-8S D2 denotes a ramp in which RHW-4 branches off of the RHW-8S mainline with the RHW-8S losing two of its lanes, become RHW-4.

- **Understanding Ramp Subtypes**

There are further Subtypes available for each RHW Ramp Type available:

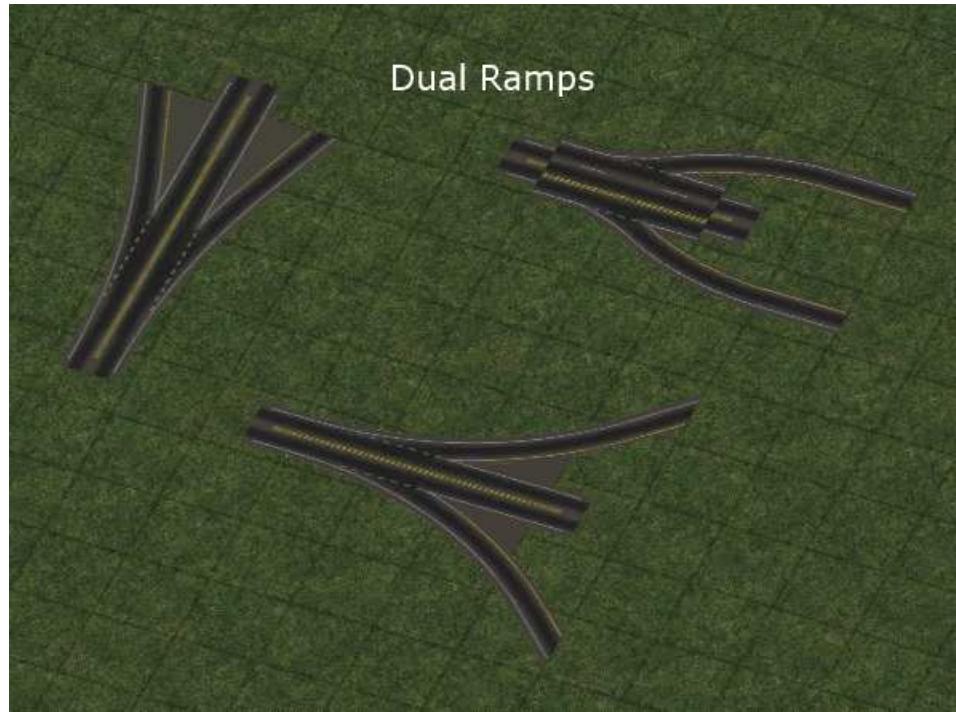
- **Outside:** Branch is on the outside of the RHW. This is the most common ramp type available.



- **Inside:** Branch is on the inside of the RHW. Only applies to RHW-4 and the S-networks.



- **Dual:** There are branches on both sides of the RHW. Only applies to RHW-2 and RHW-3, as well as certain C-network ramps.



- **Wide:** The branch is spaced one tile farther apart from the mainline. Only applies to A1 and D1 Ramps.



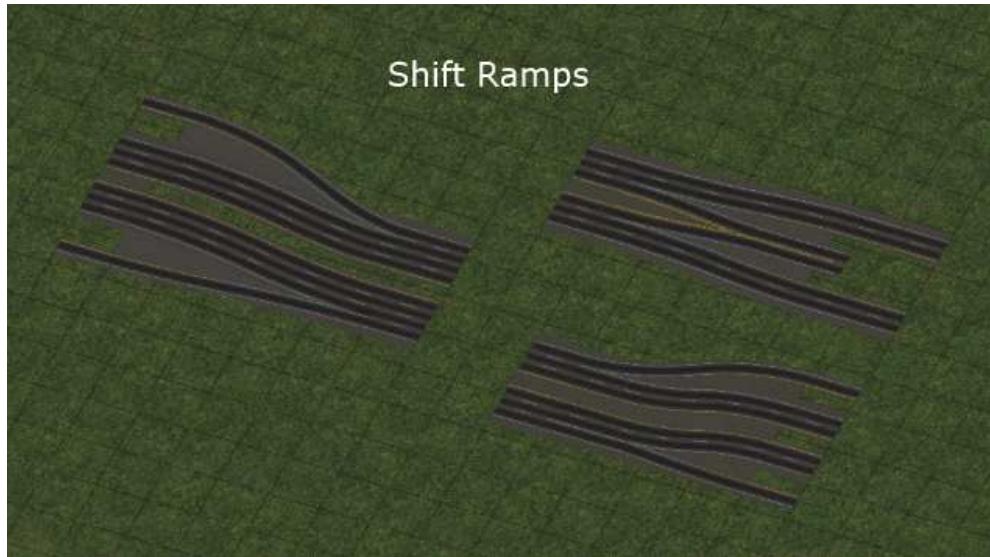
- **Folded:** Angle of the branch is the complement of the original angle. For example, an A1 or D1 ramp would have a branch at a 90-degree angle. There is only one ramp interface of this subtype.



- **Wye:** Both branches diverge from each other in the same way. Can also be thought of as a symmetrical splitter ramp. Only applies to D1, E1, and F1 Ramps.



- **Shift:** The mainline network transitions from S-type to C-type, or vice-versa. This is the largest type of Ramp available, since these also act as width transitions. These are also classified as Dual, since both carriageways are involved.



- **Inverted:** The mainline lanes diverge away from the branch while the branch itself is kept straight. This allows for a ramp interface to branch more than three lanes. This is also called "Turn off to stay on" (TOTSO). No ramps of this subtype currently exist.

• Overview of Ramp Naming Principles

The following principles are applied for naming and implementing Ramp Interfaces:

- The number of lanes on the branch **cannot exceed** the number of lanes on the mainline, unless it is an **inverted ramp**. For example, an RHW-10S ramp cannot have three lanes branching off and leave behind two for the mainline.
- Ramps can be pointed Orthogonal, Diagonal, or Fractional-Angle, in that the mainline lanes are Orthogonal, Diagonal, or Fractional-Angle. Orthogonal and Diagonal Ramps can have Types A through F, but due to organisational issues, Fractional-Angle Ramps can only have Types A, C, D, and F. There are currently no Fractional-Angle Ramps.
- The **MIS** is a single-lane network, so by analogy, the RHW-4 and RHW-6S networks can be considered as being **MIS-2** and **MIS-3** networks. The widest that a branch can be is RHW-6S. This is because this is the widest single-tile, one-way network there is.
- The ramp is named after the **widest network involved** in the Ramp Interface. For example, an RHW-6S D1 Ramp is named that way because the widest network involved is RHW-6S; it is not called an RHW-4 Ramp.
- The numeric suffix denotes how many lanes branch off of the mainline network. This allows the main six ramp types to be **applicable** and **universal** for every width of ramp, regardless of how many lanes are branching off.
- Certain **ramp subtypes** can be applied to the main six ramp types to create special variations. Not all subtypes are applicable to all ramps. There can also be combinations of certain subtypes.

- Overview of available Ramp Types**

The ramp types available for each network are summarised below:

Network Type	A1/B1/C1	D1/E1/F1	A2/B2/C2	D2/E2/F2	A3/B3/C3	D3/E3/F3
MIS	C1 only	-	-	-	-	-
RHW-2	All	-	-	-	-	-
RHW-4	All	All	-	-	-	-
RHW-3	All but C1	All but F1	Unavailable	-	-	-
RHW-6S	All	All	All	-	-	-
RHW-6C	All	D1 only	Unavailable	-	-	-
RHW-8S	All	All	C2 only	All	-	-
RHW-8C	All	All	C2 only	Unavailable	-	-
RHW-10S	All but C1	All	All	All	Unavailable	-
DDRHW-4	Only A1	-	-	-	-	-

Hyphens denote a ramp interface that does not apply to a certain network.

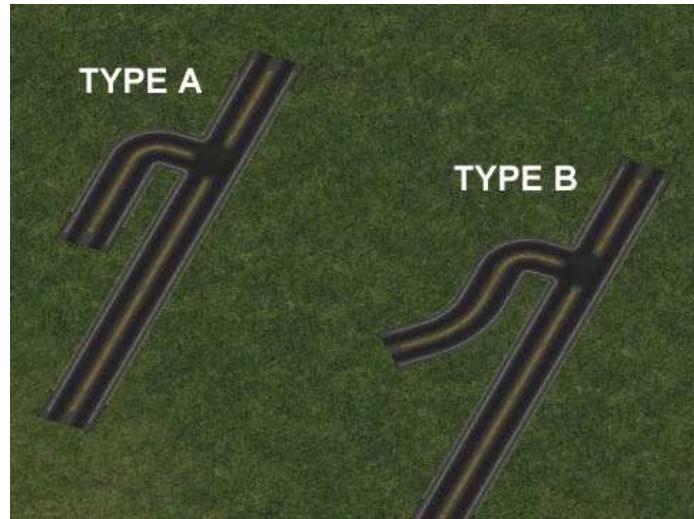
Only C-Type and F-Type Ramps apply to ground-level (L0) networks.

Types A3 to F3 are currently not available.

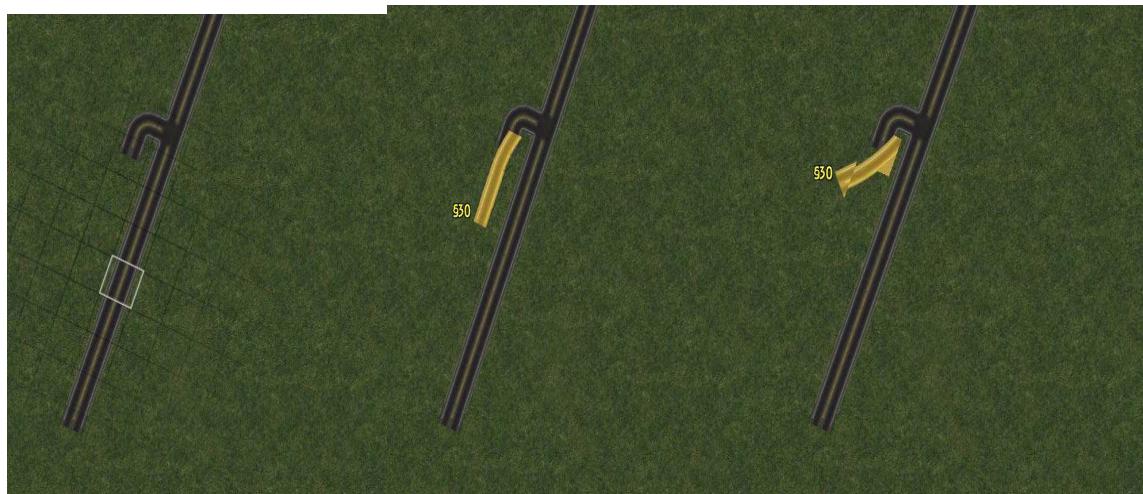
- How to use DRIs**

Draggable Ramp Interfaces were introduced in Version 4.0 as one of the first efforts at menu decluttering. **Types A1** and **B1** can be dragged, and can work for all widths and heights of RHW. Outside ramps are fully supported, but there is currently limited support for Inside ramps.

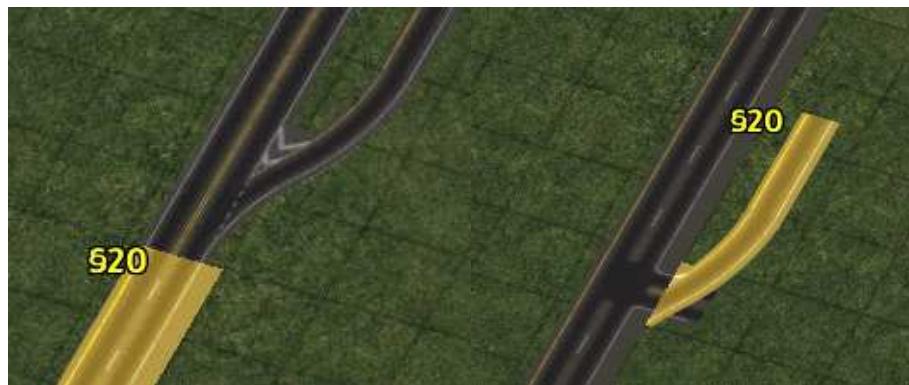
The basic layout for both DRIs is as follows:



Another way to conceive of the layout is to think of it as having a base "hook" that branches off the RHW mainlines. Dragging straight from this hook results in a Type A1 DRI, whereas dragging out diagonally results in a Type B1 DRI.



An override network, such as RHW-4, can be dragged into the DRI to override the ramp to conform to that network. Similarly, the DRI can be dragged directly from an already-overridden RHW.



• How to use FlexRamps

FlexRamps work on the same principles as DRIs, except that these cannot be drawn in any way at all and

have to be placed using a Helper tile. However, they have the advantage of being **slope-tolerant**, which is a trait that is absent with traditional ramp interfaces and DRIs. It is also immune to **Autoconnect**, another advantage over DRIs. **Types A1, B1, D1, and E1** (all orthogonal) are currently supported through FlexRamps.



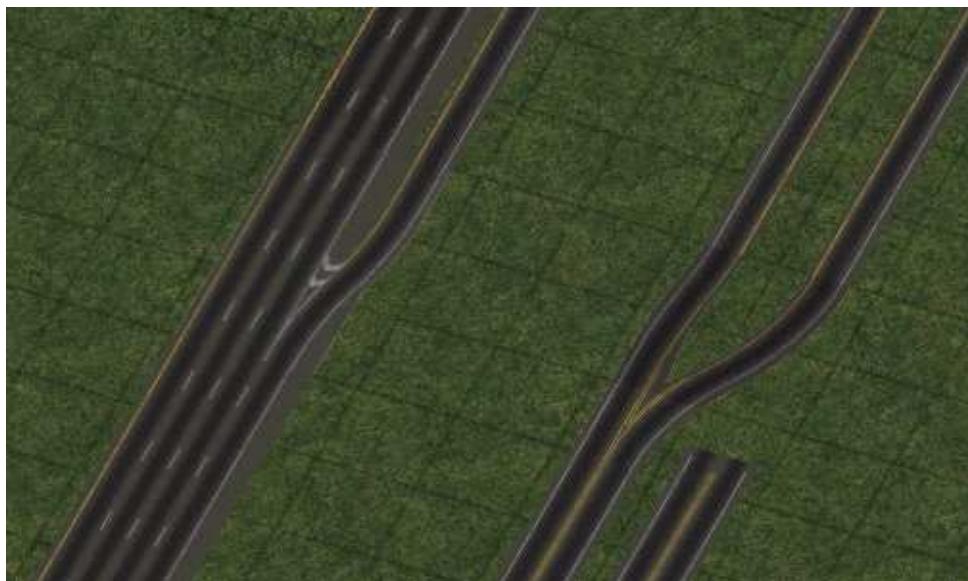
Like the DRIs, these ramps appear as **RHW-2 ramps** when plopped down, but can be overridden accordingly by dragging any width or height of RHW into it. Similarly, these ramps can be placed on top of an existing RHW and it will also override accordingly. **MIS** can be dragged out of the branch, as well. As with all Flex and Helper-based items, the construction tile must be bulldozed after plopping. If the FlexRamp is destroyed, it has to be replaced, since this piece cannot be regenerated using draggable means.

An **A1 Dual Ramp** for **RHW-2** can also be created by placing an A1 FlexRamp, then placing an additional A1 FlexRamp mirrored and directly over top the first.





Additionally, if you widen an entire highway, such as widening from an RHW-8S to an RHW-10S, whatever FlexRamps or DRIs you may have will re-override itself accordingly upon redragging the network; you do not have to re-plop any ramps.





How to use Transitions and FlexTransitions

Just like Ramp Interfaces, Transitions can be enacted using puzzle or Flex technology. The function of both types of Transitions is the same: To transition between two different widths or heights of RHW. This article will focus mainly on **Height (Ramp-styled) Transitions** and **OnSlope Transitions**.

- **Height Transition and FlexHeight Transition**

Most puzzle-based **Height Transitions** are short in length and transition between L0 and L2 networks. These networks are four tiles long, though there are a few that are elongated. All RHW widths except RHW-3, RHW-8S, RHW-10S, and RHW-8C are supported using puzzle-based transitions.

The **FlexHeight Transition** transitions an RHW network from one height level to the next highest network. By default, this piece looks like an L0 RHW-2 to L1 RHW-2 transition, but can be overridden using starters to create a transition that corresponds to any network. This transition can also work for ascending to higher levels, such as L1 to L2.



RHW can be dragged in and out of and through the entire length of the transition. Wider RHWs require multiples of the FlexHeight Transition placed **side-by-side** to achieve the full width. All RHW widths are supported through the FlexHeight Transition.



- **OnSlope and FlexOnSlope Transition**

The **OnSlope** and **FlexOnSlope Transitions** have a similar purpose to their Ramp-styled counterparts, but are used on slopes.



Most puzzle-based OnSlope pieces transition between L0 and L2 networks and have to be placed on a **15 meter high embankment**. Creating the embankment requires the use of either **Ground Lifters** or **Hole Digging Lots**, such as those that come with the NAM. These pieces may be phased out and replaced by Flex versions in a future release. All RHW widths except RHW-3, RHW-8S, RHW-10S, and RHW-8C are supported.

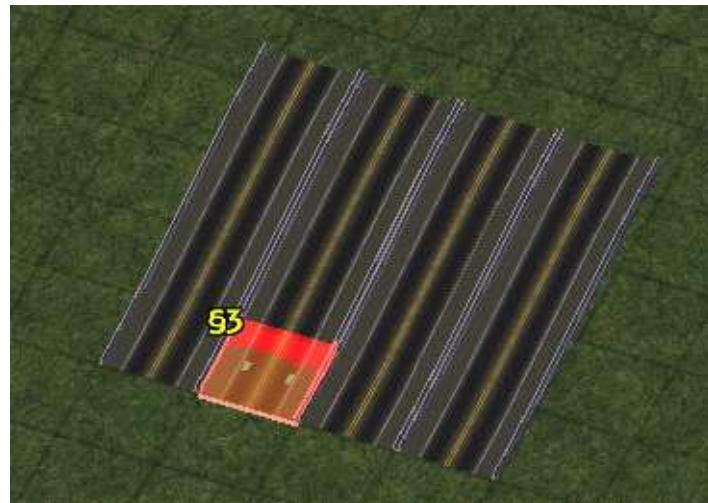
The current FlexOnSlope Transition has to be placed on a **7.5 meter high embankment**, and is overridden similarly to the FlexHeight Transition. As before, the embankment has to be created using a Ground Lifter Lot. All L0 RHW networks are supported.

- **A Word of Caution**

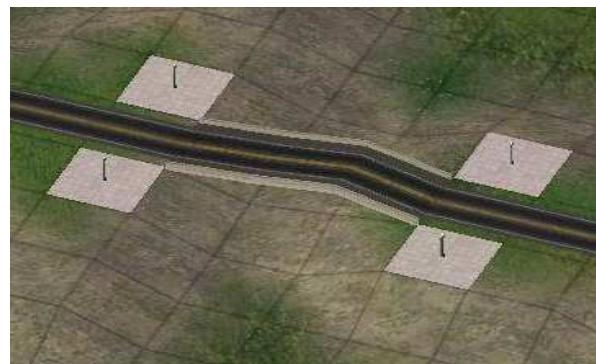
Because of the new Flex items, it is now possible to create ultra-compact overpasses without having elevated network starters in the way.



However, great care must be taken with these pieces. If multiples of the **FlexHeight Transition** is placed down side by side, demolishing just the bottom piece of any one Transition will **deconstruct** both the Transition and the Transition to its sides, converting them all into FlexOnSlope Transitions. There is no way around this problem without having to redesign the piece. If this happens, simply replace the Transition right on top.

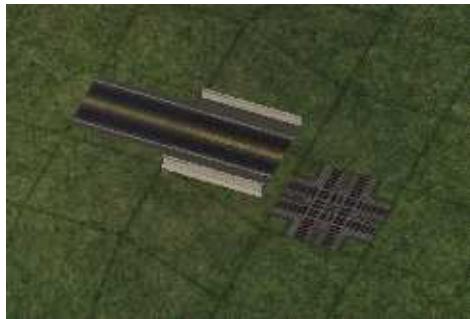


With the FlexOnSlope Transition, there are two RHW-2 "stubs" that get placed with it. These two stubs are necessary in keeping the shape of the slope, and without them, the slope may become deformed upon dragging, as shown below.

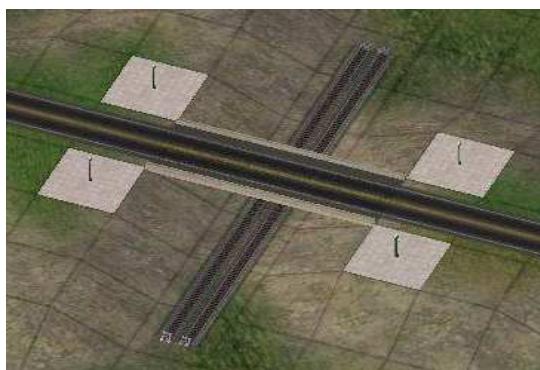


If this happens, you must demolish the Transitions, re-flatten the ground, and replace the Transitions. These stubs can be removed on purpose using Rail tiles to enable an ultra-compact embankment.

overpass.



If these stubs are removed, whether intentionally or accidentally, an **intersection** has to be drawn in its place, as shown below. The intersecting network can be almost anything. The intersection will also help to "lock" the slope in place. Placing pedmallas on top can also help lock in the slope when drawing intersections.



Both pieces rely on False Intersections containing both Rail and RHW. Additionally, the Rail component contains 04 **direction flags** (the standard flags are 00, 01, 02, and 03) that enable these pieces to be placed on uneven ground.

Also, due to the presence of **Rail** on both pieces, dragging out any farther out than five tiles from the pieces at once can result in an infinitely looping **rail construction sound**. If this happens, save and exit to region, then return to your city.

- **Transitions between RHW and non-RHW networks**

RHW can transition to and from non-RHW networks. These transitions are draggable; simply draw an RHW into another network, such as Road, or vice versa. If the Network Widening Mod is installed, then the RHW will also transition between these networks as well. The following transitions are possible:

- MIS to Avenue and OWR
- RHW-2 to Road, OWR, Street, TLA-3, AVE-2, ARD-3, and NRD-4
- RHW-4 to Avenue, MHW, OWR, TLA-5, and RD-4
- L2 RHW-4 to EMHW
- RHW-6S to RD-6 and OWR-3

- RHW-6C to TLA-7 and AVE-6

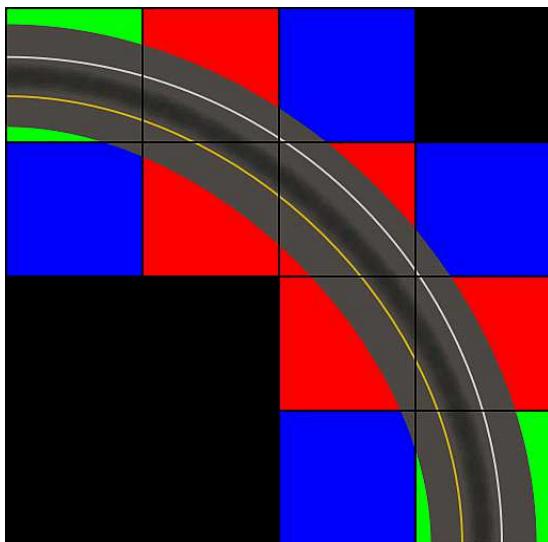
NOTE: If you have **Project Symphony** installed, RHW-4 will also transition to and from MHW and EMHW.

- **How to use the FlexFly and FlexCurve**

FlexFly Pieces were first introduced in RHW Version 4.0 as a 4x4 L2 MIS curve in which ground networks can cross under it. NAM 31 expands on the original FlexFly's function by adding in additional FlexFlys and FlexCurves, ground-level versions of the FlexFly. They come in two sizes: 4x4 and 5x5.

- **4x4 FlexFly**

The first overridable puzzle piece, the FlexFly, was introduced in RHW Version 4.0 to create elaborate overpass setups involving curved flyovers. There are two types of FlexFly available: **Type A1**, a 90-degree outer curve (yellow line on the inside), and **Type A2**, a 90-degree inner curve (yellow line on the outside).



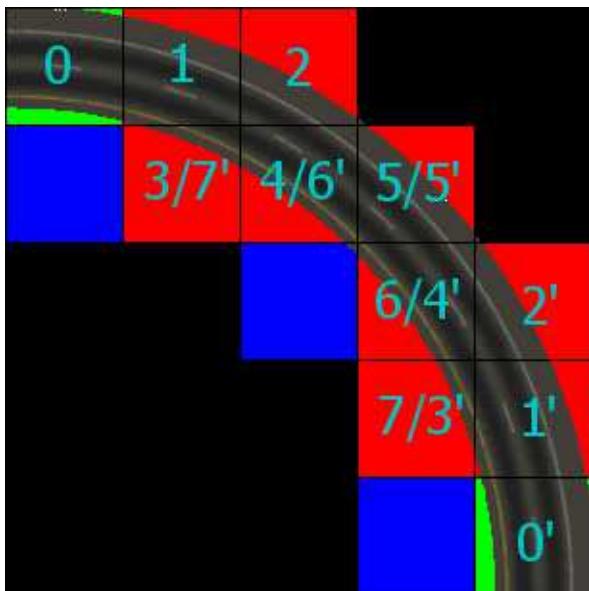
All ground-level RHW widths can cross under

- MIS-1
- RHW-2
- RHW-4
- RHW-6S
- RHW-6C
- RHW-8S
- RHW-8C
- Project Symphony MHW

These are only N/S or E/W connections, no diagonals exist at this time. When using Flex Fly, you may either place the FlexFly first and draw RHW under it later, or place it directly on top of the RHW. If an override seems to be failing, click around and try to get it to fix itself, or try the opposite plop method.

The helper piece (construction piece) should be demolished after plopping. However it does not interfere with plopping directly on top of an existing RHW.

Elevated MIS is able to be directly drawn out from the two "anchor points" of FLEXFly (the tile on the end of the curve, one on each end, marked in **green**). FLEXFly is able to be "rebuilt" without replopping it, as long as the anchor points are intact. Simply plop 1x1 RHW tiles in the following pattern (**red**). The overhanging tiles (**blue**) will fill automatically.

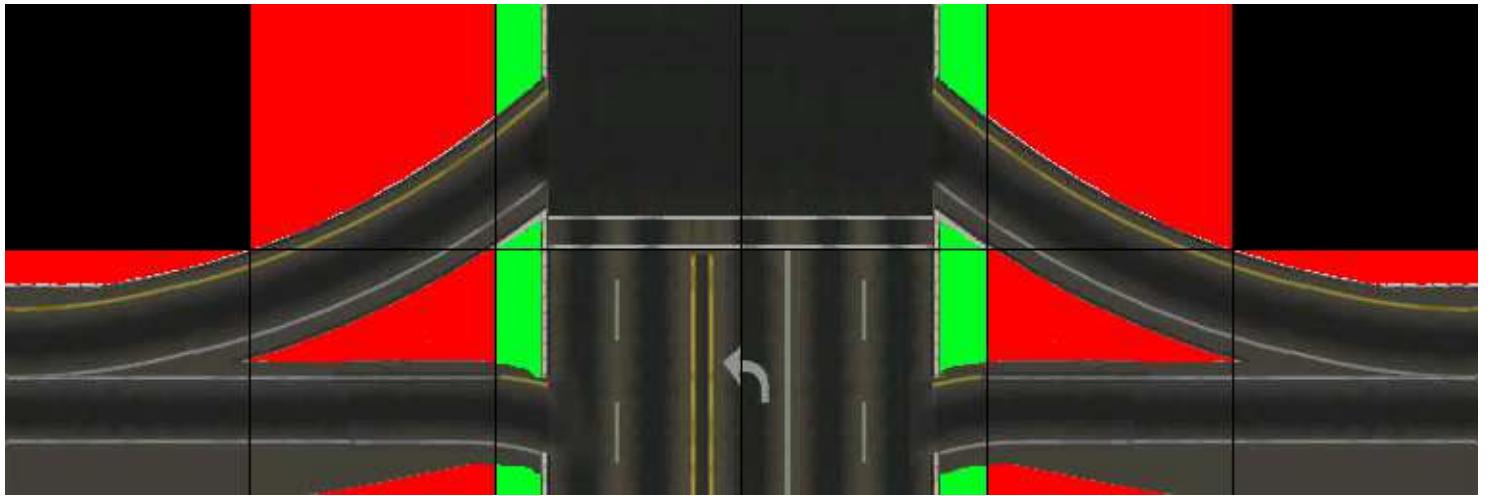


- **Other Flex Items**

- **FlexSPUI**

The **FlexSPUI** is a type of Flex item that is used to build SPUIs. Similar to the FlexFly, the FlexSPUI can be regenerated by placing single RHW tiles in the pattern as shown (indicated by the red tiles, numbered 1-3 and 1'-3'), as long as the "base" piece (indicated by the green tiles, numbered 0a, 0b, 0'a, and 0'b) is intact. RHW-4 can be dragged out of the leftmost and rightmost tiles (numbered 3 and 3').





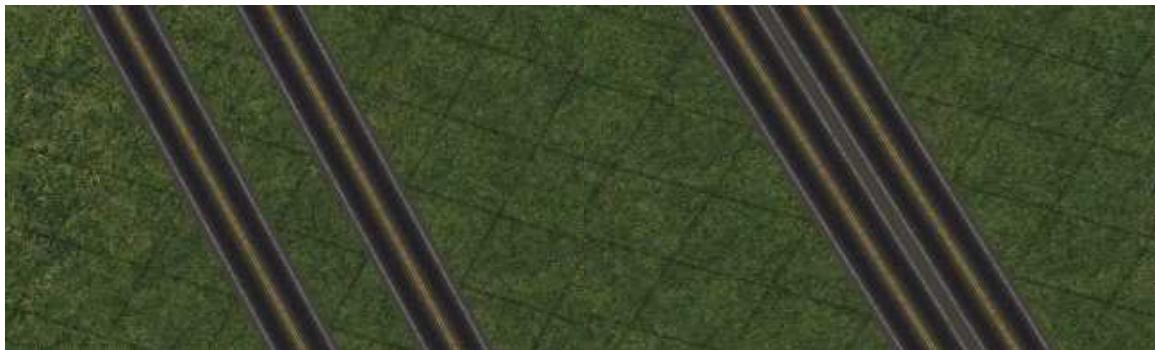
- **RHW-Tram Dual Networking Crossing**

RHW includes the ability to cross RHW with Tram Dual Networking.

- **How to Properly Construct Diagonal RHWs and Overpasses**

- **Diagonals**

NAM 31 includes **diagonal functionality** for all networks, so every height and width of RHW can be dragged diagonally. Wider RHWs have to be built using a **split-tile setup** (shown left), where there is **no overlapping** between the any two RHWs. The **shared-tile setup** (shown right) is not used at all.



NOTE: It may also help to draw out the layout for your RHWs using RHW-2 **before** adding in starters.

- **Two-Level Overpasses**

NAM 31 has fixed a fundamental issue that used to prevent making draggable diagonal overpasses, so all possible **RHW-RHW overpasses** can be built. These crossings are dragged out as easily as the same way as Orthogonal-Orthogonal (OxO) overpasses as before. Just simply drag RHW in the following pattern, according to how wide each RHW needs to be. The Half-Dragging Method, as explained in the next section, does work here, but it's not necessary to use it, nor would it matter if the crossings are full-dragged or half-dragged.



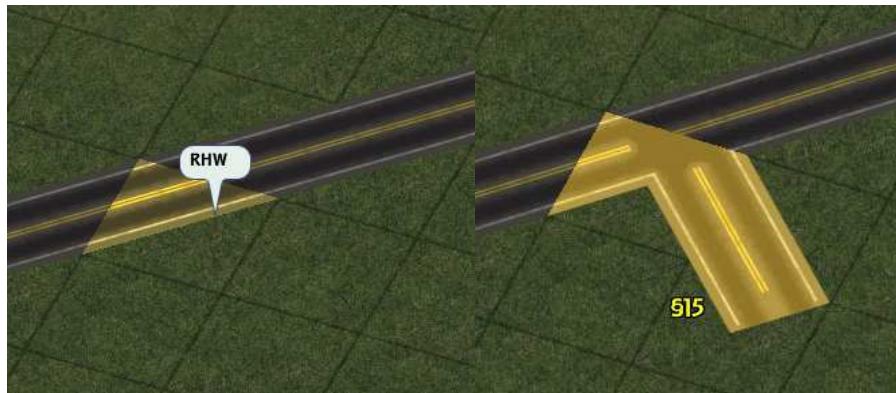
Crossings involving RHWs spaced farther apart, as shown by the Rail tiles, can also be drawn without any problem. This can be used for **wider medians** between two carriageways.



• Half-Dragging Method

Despite the ease-of-construction breakthroughs, there may be cases in which dragging a diagonal crossing may be difficult to execute and may deconvert back down into a mess. In this case, the **Half-Dragging Method** can be used instead. Most RHW-RHW overpasses will work regardless of Half-Dragging or fully dragging across. Certain types of advanced crossings require the Half-Dragging Method to be drawn correctly.

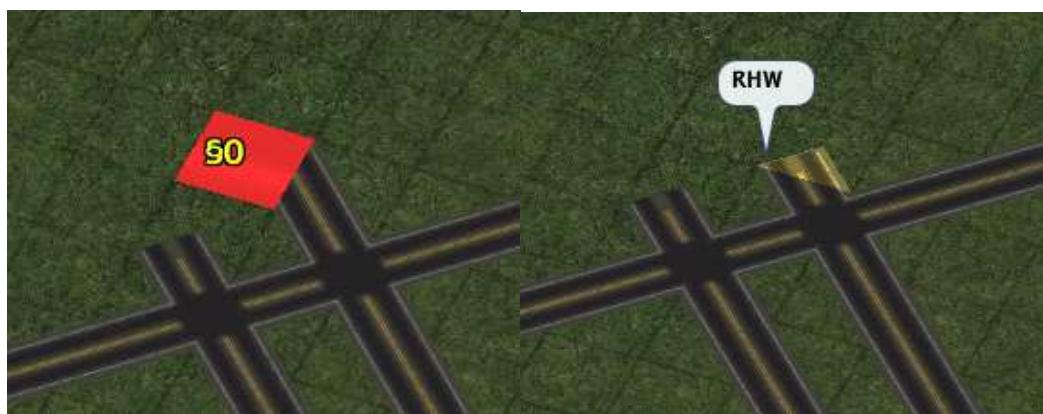
Half-Dragging requires dragging **diagonal T-crossings** out from an RHW, as shown. This produces half of the crossing. This also works with dragging orthogonal RHW out. Begin by dragging RHW out (orthogonally or diagonally) out of a diagonal RHW tile, as shown below. Dragging in certain directions will change the position where the RHW will be placed.



To complete the crossing, simply repeat the process on the other side, dragging out similarly as before. This process can be repeated to create multiple half-dragged RHWs.



To add in an additional RHW to cross with the half-dragged RHWs, first demolish the half-dragged RHW (or RHWs) until a diagonal stub is left sticking out, as shown.



Next, drag a stretch of diagonal RHW so that it cuts through the stubs. This creates another set of half-dragged crossings. Completing the second set of crossing is the same as the first set of crossings.



- **Three-Level Overpasses**

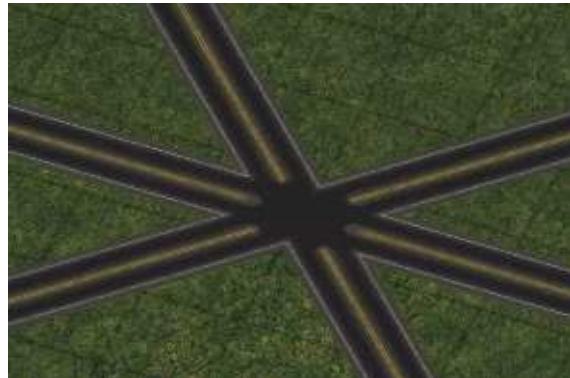
NAM 31 also introduced the ability to construct draggable **Three-Level Overpasses**. Constructing these overpasses are much more advanced than Two-Level Overpasses and drawing these overpasses require more care to draw out, and may also require the **Half-Dragging Method**. There are three types of crossings: **Type 1**, **Type 2**, and **Type 3**. The three height levels can be any height level, but no two networks can have the same height level.

Type 1 Crossings involve two Orthogonal RHWs and one Diagonal RHW. The two Orthogonal networks can be any network width, such as RHW-4 or the modular segments of the wider RHW networks, but the Diagonal network can only be **RHW-4** or **MIS**. The base crossing is drawn using the Half-Dragging Method, as shown:



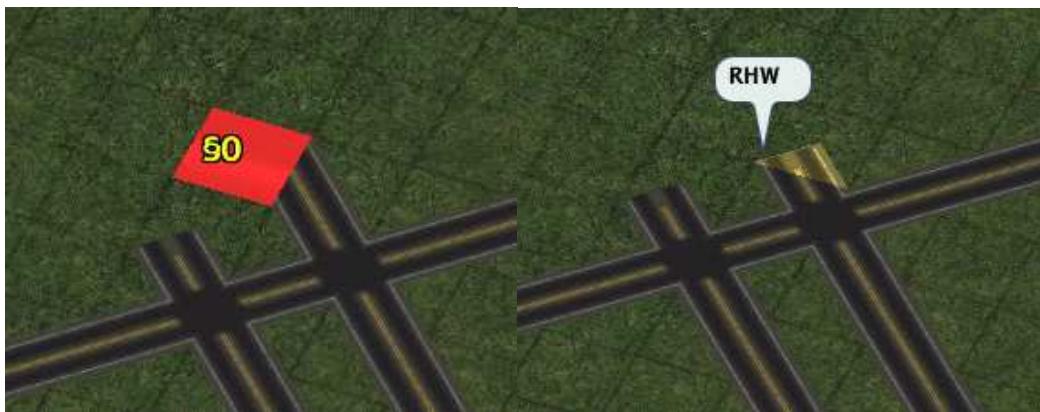


Type 2 Crossings involve one Orthogonal RHWs and two Diagonal RHWs. The Orthogonal network can be any network, but the two Diagonal networks can only be **RHW-4** or **MIS**. The base crossing is drawn using the "**Batwing**" Crossing.



Type 3 Crossings are a variation of the Type 2 Crossing, except that it is rotated 90 degrees and has two orthogonal networks. The two Orthogonal networks have to be the same height level, and they have to be either the same network, such as Dual RHW-4, or make up a wider network, such as RHW-8S, where one network is the outer lanes and the other is the inner lanes. The diagonal networks can only be RHW-4 or MIS.





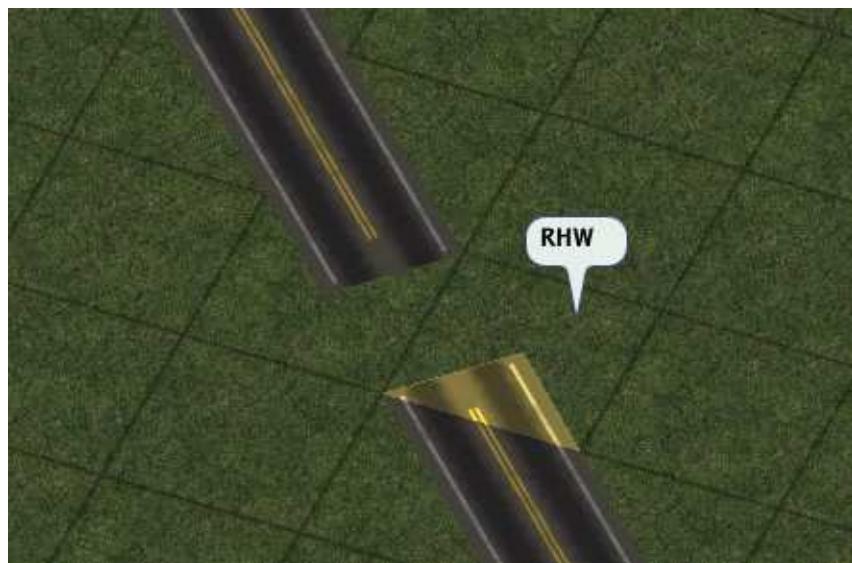
A Note about

Autoconnect

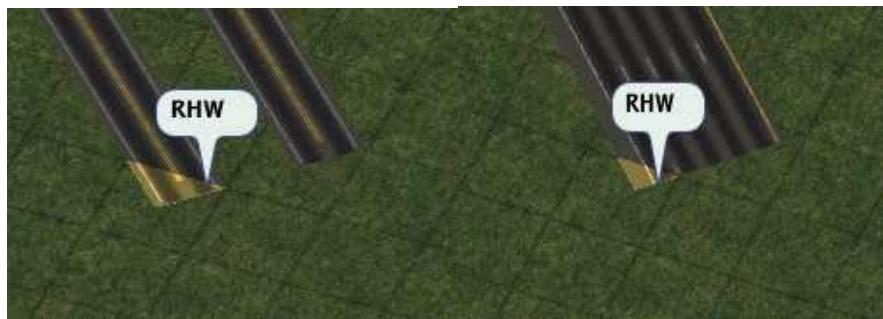
Autoconnect is a feature that is only found on the **RHW** and **Street** networks that automatically creates connections or intersections. It only happens when the RHW stub is adjacent with other networks, including the RHW itself. This also means that adjacent RHW stubs cannot be drawn like non-Autoconnect networks without the two stubs connecting together. This tends to get in the way when building RHW systems.



THIS IS A **HARDCODED** FEATURE AND **CANNOT BE DISABLED**. However, there are techniques at avoiding Autoconnect. Diagonal RHW stubs cannot connect if the two are adjacent, as shown:



When terminating multiple diagonal RHWs, be sure the stubs are in the same alignment, as shown. This is so that when the RHW is overridden, the stubs, such as those on an RHW-10S, will line up properly. This also helps to prevent accidental autoconnecting between the two segments.



However, if there are multiple diagonal RHWs that don't terminate in the same position, diagonal RHW stubs can connect if the adjacent RHW is clicked on with the RHW Tool.



If a diagonal RHW does Autoconnect, bulldoze the tile as shown below. This will avoid any additional Autoconnect when bulldozing.



When dragging adjacent diagonal RHWs, be sure to avoid leaving a stub right next to any other diagonal RHW. This can be done by leaving a gap between the stub and the second RHW, as shown by the road tile below.



When bulldozing multiple diagonal RHWs, such as with an RHW-6C, also avoid leaving a stub next to the second RHW. Bulldoze from the inside out two tiles at a time, in the pattern as shown.



When bulldozing an RHWxRHW crossing to remove a segment, it may be best to **demolish** the entire

crossing, as the chance of the segments connecting together when trying to demolish just part of it is fairly high. Trying to redraw the crossing when it's autoconnected may make it worse.



- **Interchange Construction Tutorials**

The absolute biggest strength that RHW has over default MHW is the ability to create custom interchanges. Explaining how to build every possible type of interchange would be a monumental feat that would deserve its own Manual in itself, so instead, the following section explains how to construct several basic interchanges, some involving basic features such as DRIs and others using advanced features such as Flex Items.

More advanced tutorials and other interchange designs can be found on the **RHW Interchange Guide**. The rest is limited to your imagination.

NOTE: These tutorials only explain one way to construct a particular interchange; there are plenty of other ways to construct an interchange.

- **Basic Tutorials**

The following tutorials are meant to familiarise new users with the Road/RHW pieces, DRIs, and FlexTransitions. The two interchanges in this section are the Diamond and Cloverleaf Interchanges, two interchanges with very simple designs. These tutorials are explained step-by-step.

- **Diamond Interchange (Beginner)**

Diamond Interchanges are very simple in design and involve a highway with an arterial road going over or under it. The offramps and onramps create a diamond-like shape with the arterial road, hence the name.

- Create a **Dual RHW** using any network width of your choice. Be sure it's at least 20 tiles long from where the starters were placed. About 8 tiles from the starters, drag out **Road** perpendicular to the RHW, starting four tiles away.



The picture above shows the Road being closer for illustration purposes.

- Place the **Road over RHW Piece** (found in the Roads Menu) on top of the RHW, in the place as shown. This is where the Road will go over the RHW. Do this for both carriageways, rotating the pieces accordingly to line up with the lane markings and shoulders.



- Place the **Road-MIS Intersection** next to the Road over RHW Pieces as shown. Rotate these pieces accordingly. The markings may be very subtle to notice. This is where the MIS will cross with the Road. Do this for both sides of the interchange.



- Place the **Road Start/End Piece** so that it joins with the Road-MIS intersection and the Road. This will connect the overpass with the ground. If the Road on the ground is too close that it gets in the way with placing the Start/End Piece, bulldoze it until it's at least three tiles from the Road-MIS intersection.



- Drag an **RHW Stub** from the main highway 6 tile from where the overpass is. This is where the RHW Ramp Interface will go. Drag out the Ramp Interface; this is a **Type A1 Draggable Ramp Interface**.



- Place an **L0-L2 MIS Starterless Height Transition** in the gap between the Ramp Interface and the Road-MIS crossing. This will join the Ramp Interface with the Road. Make sure that the Transition is the correct one, as indicated by the arrows and the word "ON" or "OFF" in the name of the piece.



- **Repeat Steps 5 and 6** for the remaining three Ramp Interfaces to complete the interchange. The final interchange is shown below.
- **Cloverleaf Interchange (Novice)**

Cloverleaf Interchanges are one of the first interchange designs used to interchange traffic between two highways. This requires giant loops to interchange left-turning traffic (or right-turning traffic in LHD), with the resulting shape of the interchange bearing semblance to a four-leaf clover, hence the name

- Build a **Dual RHW** of any desired width. Make sure this is at least 30 tiles long from where the starter is. About 15 tiles from where the starters are is where the second RHW should be built perpendicularly. Place its starters about 20 tiles from where the two RHWs will intersect. The

perpendicular RHW should be at least one tile away from the first RHW. This will provide room for the Transitions that will go in later on.



- Place down four **FlexHeight Transitions**. This will create an overpass for the second RHW to pass over. Bulldoze the construction tiles and drag RHW to connect the two transitions. If an override fails, you may need to click on part of the Transition to get it back in order.





- Starting in one of the quadrants, place down two **B1 FlexRamps**. Place the one for the first RHW (shown left) three tiles from the overpass, and place the one for the second RHW (shown right) two tiles from the bottom of the transition. Be sure to bulldoze the construction tiles afterwards.



- Drag out **MIS** from the Ramp into a loop-like shape to connect the two Ramps together.



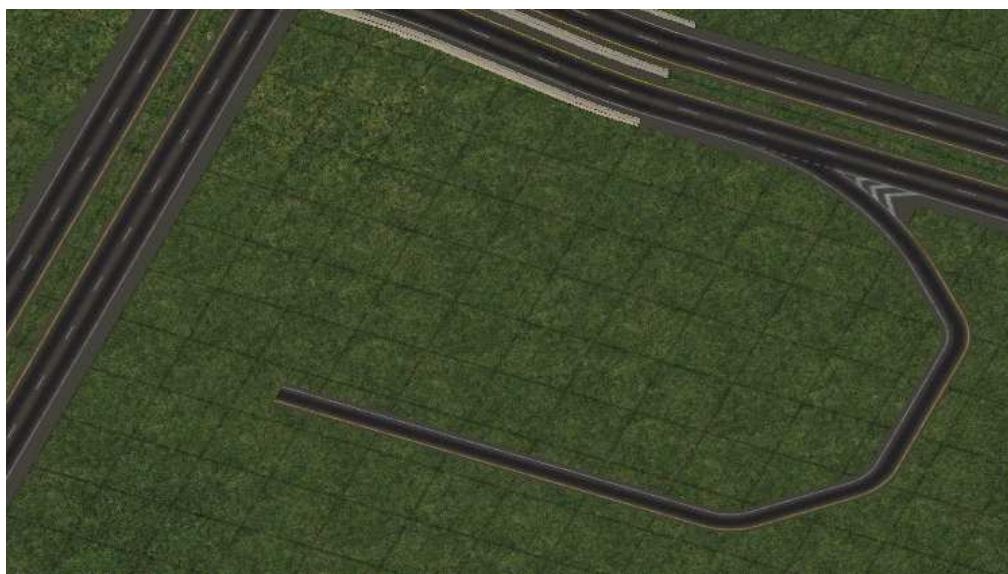
- Drag **RHW-2** alongside the first loop. This will provide the base for the right-turn ramps.

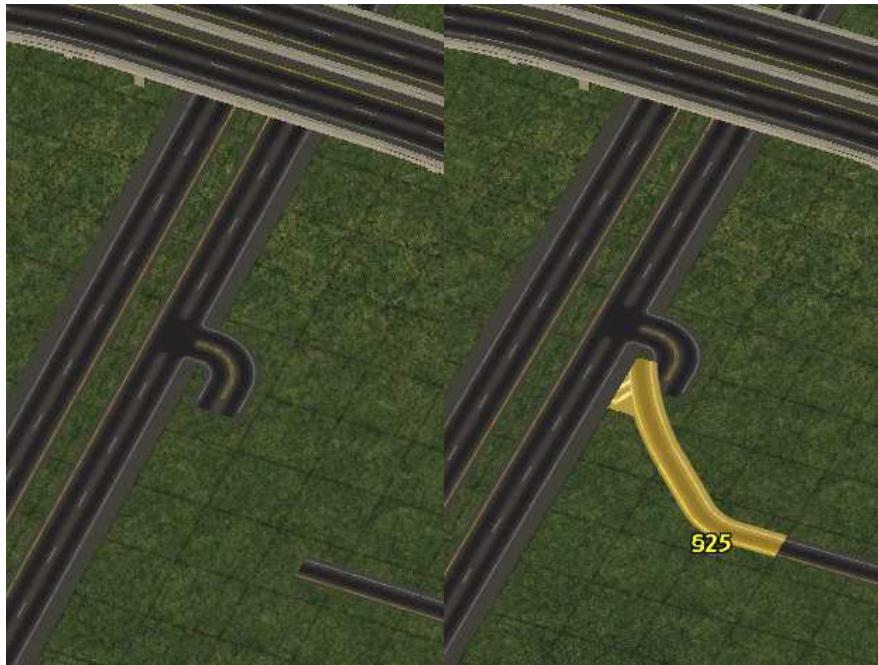


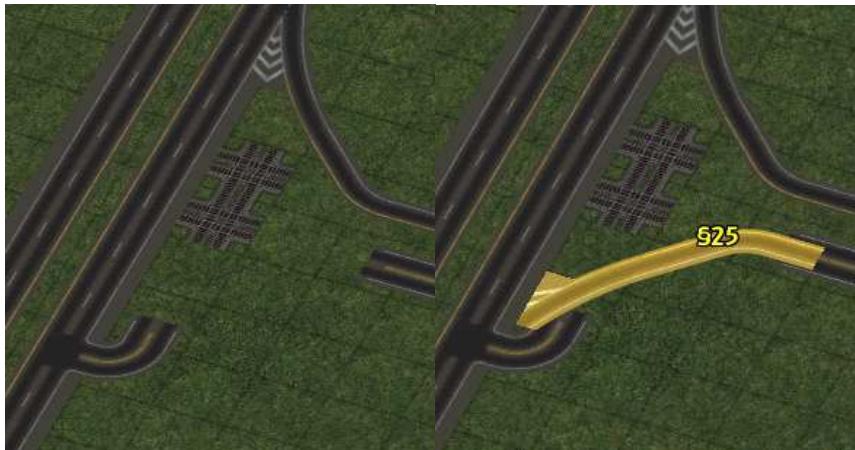
- Place two more **B1 FlexRamps** to connect to the second RHW with both RHWs. Place the Ramps so that there is a two-tile gap between the two Ramps, as shown by the Rail Tiles. Connect the RHW-2 with the FlexRamps.



- Bulldoze the remaining construction tiles. Repeat steps 3 through 6 for the three remaining quadrants to complete the interchange. The completed interchange is fairly compact, but not very smooth. Wide-radius Curves can be added to smooth the shape, but this would require a larger footprint.







Intermediate

Tutorials

The following tutorials are meant to familiarise trained users with more advanced pieces; these are the Specialised Crossing Pieces. The Interchanges shown here are for the Diverging Diamond Interchange and Volleyball Interchange.

- **Diverging Diamond Interchange (Intermediate)**

The **Diverging Diamond Interchange (DDI)** is an interchange that originated in France, but has recently caught on with North American highway engineers. The Missouri Department of Transportation (MODOT) opened the first in the United States in Springfield on June 21, 2009, and several more have opened in the US since.

The DDI involves having traffic cross onto the "wrong" side of the road (left side of the road in RHD, right side of the road in LHD), which allows left turn movements flow more smoothly and traffic on and off the highway to go unsignalised, with only the through movements on the surface street requiring signalization.

- In order to build a DDI, place down a **DDI piece**. This will make up half of the crossing. Place another DDI piece at least two tiles away from the first. The space between the two pieces depends on how wide the network crossing over it will be. Be sure that the ends with the OWR stubs align with each other. You can tell which way the pieces should be oriented by looking at the lane markings and the arrows; the OWR stubs should be on the inside.



NOTE: If you are using Euro Textures, there will be no yellow lines. The only indicators you will have are the arrows and the shoulders. If you are using an LHD installation, then the arrows should be reversed from what is shown above. In any case, looking at where the Avenue and OWR stubs are can also be a helpful indicator.

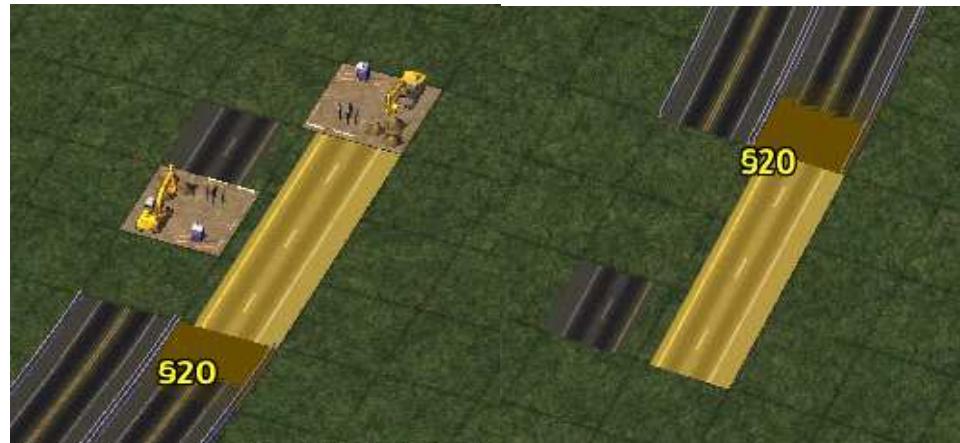
- Drag **OWR** to connect the two DDI halves together. Remember that these have to be dragged the "wrong" way. If the arrows on both the DDI crossings and the OWRs are pointing in the same direction, then you have dragged the crossing properly.



- Place down a set of **Height Transitions** (two on each side if using Dual RHW-4). This will elevate the highway so that it can cross over the OWRs. If you are using **FlexHeight Transitions**, be sure to remove the construction tiles afterwards. In either case, drag RHW to connect the Transitions together.



- If you are using **FlexHeight Transitions**, now is the time to affix your starters. If part of the overpass fails to override, click on part of the Transition with the RHW Tool. If you are using a **Puzzle-based Transition**, now is the time to drag out RHW from the starters, if there are any starters.



- At this point, the basic "core" of the interchange is now built. The final steps would be to affix the necessary **Ramp Interfaces**, and if desired, **Transitions**, **Curves**, or **FARHW**, and to extend the AVE and highway further out. The remaining stubs on the DDI piece should connect to **RHW-4**.



An alternate way of constructing a DDI is to have the OWRs be elevated or have the DDI on an embankment. Either method would require using the **Elevated OWR**



Puzzle Pieces and the Hole Digger Lots.

- **Advanced Tutorials**

The following tutorials are meant to familiarise seasoned users with the most advanced of RHW Items, such as the FlexSPUI and TuLEPs. It is recommended to be very comfortable with using the RHW and with the HD/GL Lots before attempting to build these interchanges.

- **FlexSPUI (Advanced)**

The **Single-Point Urban Interchange**, or **SPUI**, is a type of high-capacity, grade-separated interchange. While conventional diamond interchanges usually involve two separate intersections to provide access between a surface street and a highway, the SPUI combines the two intersections into a single intersection (usually with slip lanes), improving traffic flow.

Place down the **FlexSPUI piece**. It will appear as half of a SPUI. Placing another half so that it joins with the first piece will complete the crossing.

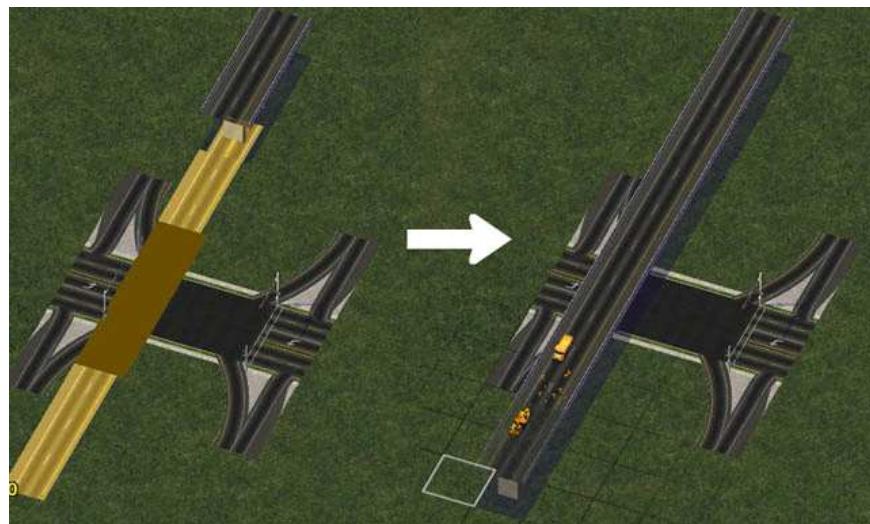


Alternatively, the two halves can be placed farther apart and the gap can be filled in by dragging **Avenue**

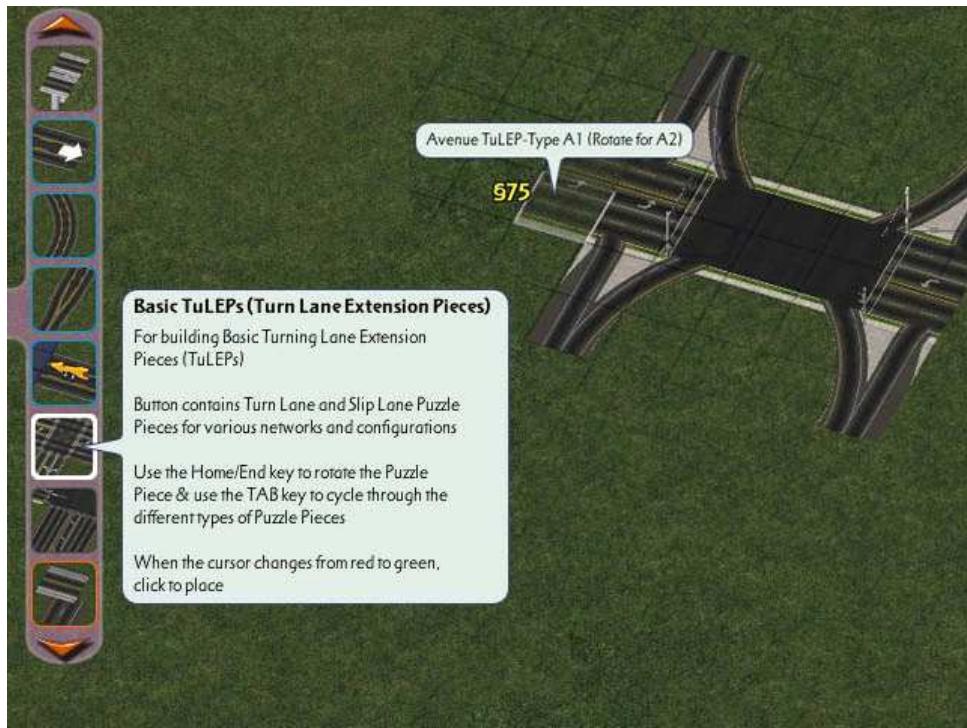
between the pieces. This can be used to allow wider RHWs to cross over. In either case, make sure to bulldoze the **construction tiles** on the piece.



Elevated RHW, such as L2 RHW-4, can be dragged over top of the FlexSPUI, like so:



In order to connect the Avenue end, use the Avenue Type A1 TuLEPs, included in the **NAM's Turn Lane Extension Plugin**:



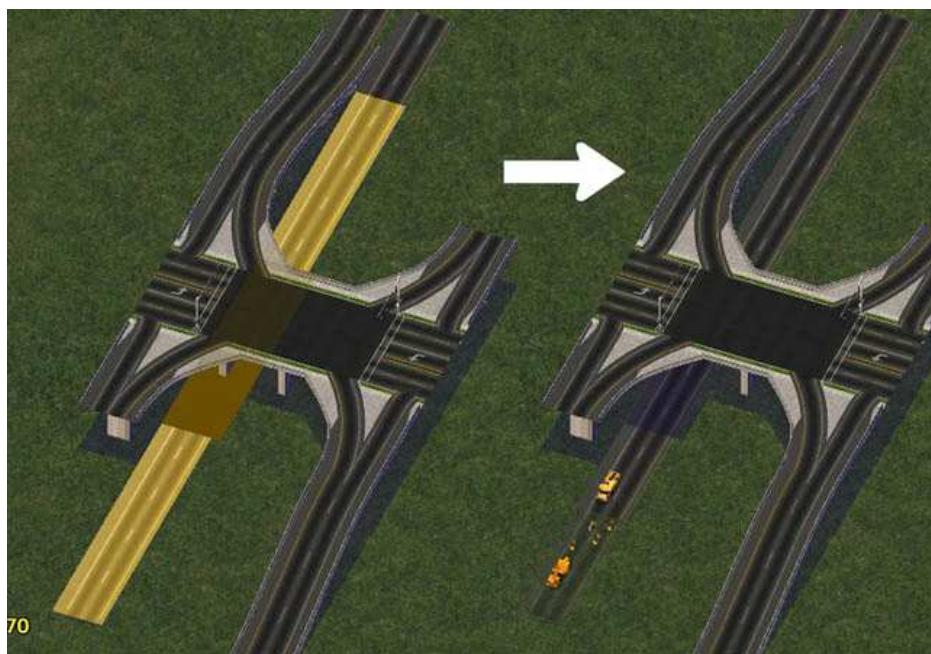
It is also possible to elevate the FlexSPUI. Simply place an elevated RHW-4 connection (such as an RHW-4 Ground-to-Elevated Transition) next to the ramp connection on the SPUI. Most of one half of it will become elevated--simply click on the non-elevated part with the RHW network tool and it will automatically elevate:



The overrides are most stable on the "incoming" part of the ramp connection ("outgoing" in Left-Hand Drive)--this shows the rest of the SPUI becoming elevated:



You can simply drag a ground-level RHW underneath the Elevated FlexSPUI, much as you dragged the Elevated RHW over the Ground FlexSPUI:



In order to connect the Avenue end, you will need to use the Avenue Type A On-Slope TuLEP. Hole-digger lots, such as the set by **Shadow Assassin** are highly recommended. For a video demonstration of FlexSPUI construction, please see Tarkus' YouTube videos on Ground FlexSPUI and Elevated FlexSPUI. Please note that this is the first iteration of FlexSPUI functionality. Some particular setups may not be fully supported or stable yet--in these situations try clicking around with the network tool to attempt to get the Override RULs to resolve properly.

- **Highway Customisation**
- **Highway Layouts**

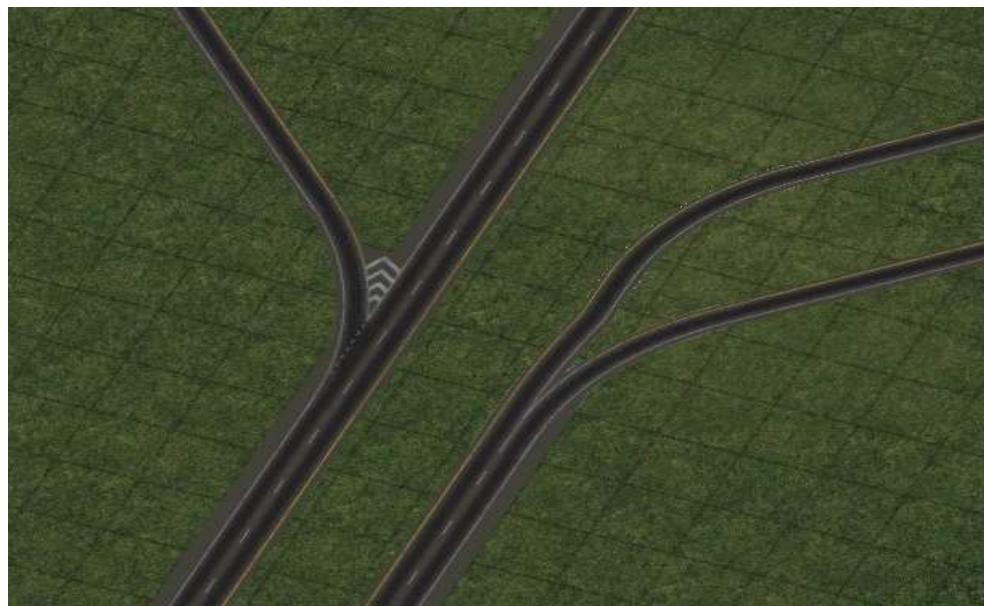
With RHW being a multi-purpose highway tool, it's a good idea to run a few examples of highway layouts.

- **Traditional Rural Functionality**

With its original use being to construct rural highways, it's easy to expect that RHW, even today, would still do that, and it still does.



These kinds of setups are commonplace in rural areas of the US, and it's also common to see these kinds of setups be separated by a one-tile gap. Also common are at-grade crossings with two-lane roads. Signalised crossings are very uncommon here. Ramp Interfaces can also be seen if the highway itself has further restrictions, or if the highway terminates at an interchange.

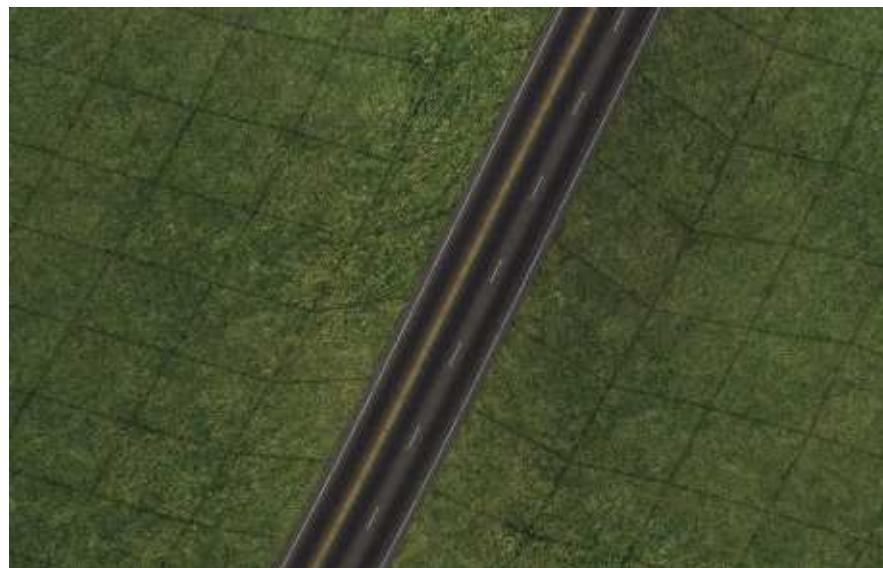


A narrow and more rural option can be employed by just using the RHW-2 network. Since this is the only

network that doesn't require starters, the RHW-2 can be easily drawn without almost any problems, and can be used to simulate the totally out-of-the-way backroads found in the western US.



Another network that can be used is the RHW-3, and this can be used for uphill roads as climbing lanes. Climbing lanes allow an area for slower vehicles to drive along without faster traffic from behind being obstructed. The two lanes go uphill, with the single lane going downhill.





- **Using RHW-2 and RHW-3 as Highways**

Certain areas of the world use two-lane and three-lane roads (RHW-2 and RHW-3) with the added function that these have the same limited access as other highways.

One example is the Super-Two. It's essentially a two-lane highway, or in terms of RHW, an RHW-2 that's treated like a limited-access highway. This is part of the reason why RHW-2 has Ramp Interfaces.



The idea of a 2+1 Road is used mainly in Europe (particularly Sweden), where a four-lane highway would be too expensive to construct. The two-lane half would be an overtake zone, and this switches sides at regular intervals along the length of the highway. Because of this function, the RHW-3 is given Ramp Interfaces and transitions.



- **Multi-RHW**

The Multi-RHW, as popularised by **Haljackey**, involves running multiples of the same network, such as RHW-4 and RHW-6S, in the same direction, with the same thing repeated for the other half of the highway. This creates an RHW within an RHW. Any widths of RHW can be mixed and matched together to create even wider RHWs.



This is used for **Collector-Distributor** setups or **Collector-Express** setups, which is typical in busy interchanges where weaving (cars entering a highway in close proximity to cars exiting a highway) needs to be reduced. This is also reminiscent of some of Canada's highways (Highway 401, in particular). Several types of Ramp Interfaces, particularly Type A2 to F2, exist that allow for Multi-RHWs to begin and end.



- **Using Cosmetic Pieces**

The following section contains excerpts from the **RHW Seminar** "The Real Highway Mod, the Cosmetic Pieces and You", and has been adapted accordingly to fit into the manual. This section explains the usage of Cosmetic Pieces, and explains how to achieve a certain level of realism using these pieces.

- **Acceleration/deceleration lanes**

A typical Type A1, B1, or C1 Ramp Interface, such as the RHW-4 ramps shown below, will work fine in itself, but instantaneous merging/branching isn't usually deemed realistic. It usually takes a fair distance to speed up or slow down, and to do so directly on the highway's lanes is unsafe.



As an alternative to that, what you can do is replace a small stretch of RHW-4 with RHW-6S to create acceleration/deceleration lanes. These help drivers to slow down for an exit or speed up to merge with other traffic. Deceleration lanes don't have to be long; however, for safety reasons, keep as a standard length for the acceleration lanes of 10 to 20 tiles (160 to 320 meters, or 520 to 1040 feet).

Use an RHW-4 to RHW-6S transition, and replace the A1/B1/C1 Ramps with RHW-6S D1/E1/F1 Ramps. After doing so, the example looks like this:



But it still looks bare. That's where CPs kick in. By adding some block markings, it's clearer that these lanes are no ordinary lanes, but have a special function. You can plop the cosmetic pieces over existing stretches of RHW, and you can also plop the cosmetic transitions on top of the default Type A Transitions.



The following example separates the acceleration and deceleration lanes from the main lanes:





NOTE: The CPs have the habit of flattening slopes. They do have some slope tolerance, but not much. However, if you have realistic, gentle slopes on your RHW, this shouldn't be a problem.

- **Ramp OverPlops**

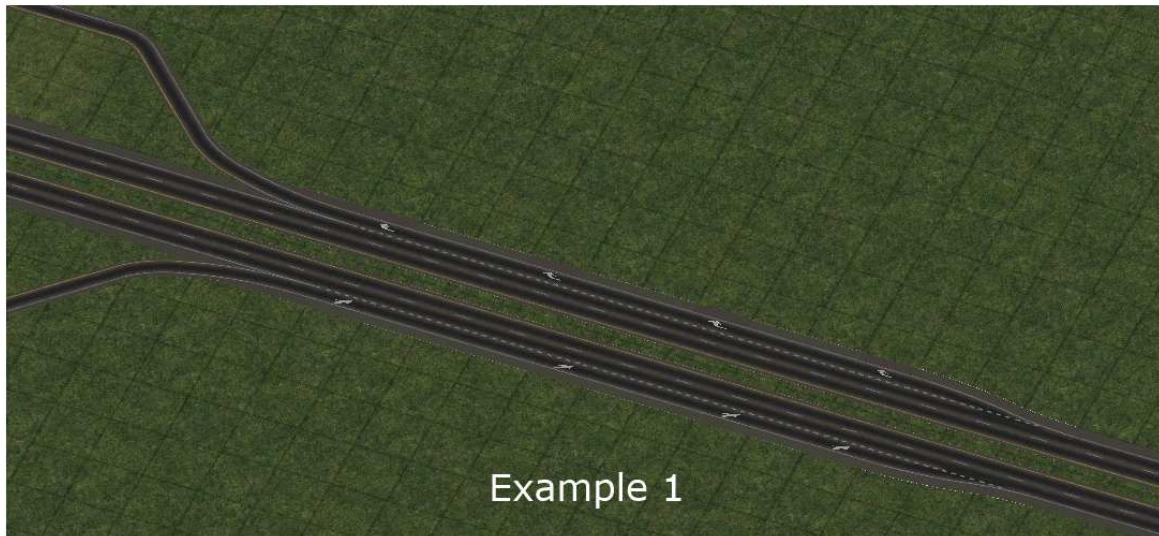
One special kind of CPs are the Ramp OverPlops. These pieces are plopped over existing ramps. For the RHW-4, there are Ramp OverPlops available for the draggable RHW Ramp types A1 and B1 (the A1 wide is corrupted at the moment). These are necessary to connect the ramps with the Narrow Exit Lane (**NEL**) CPs.

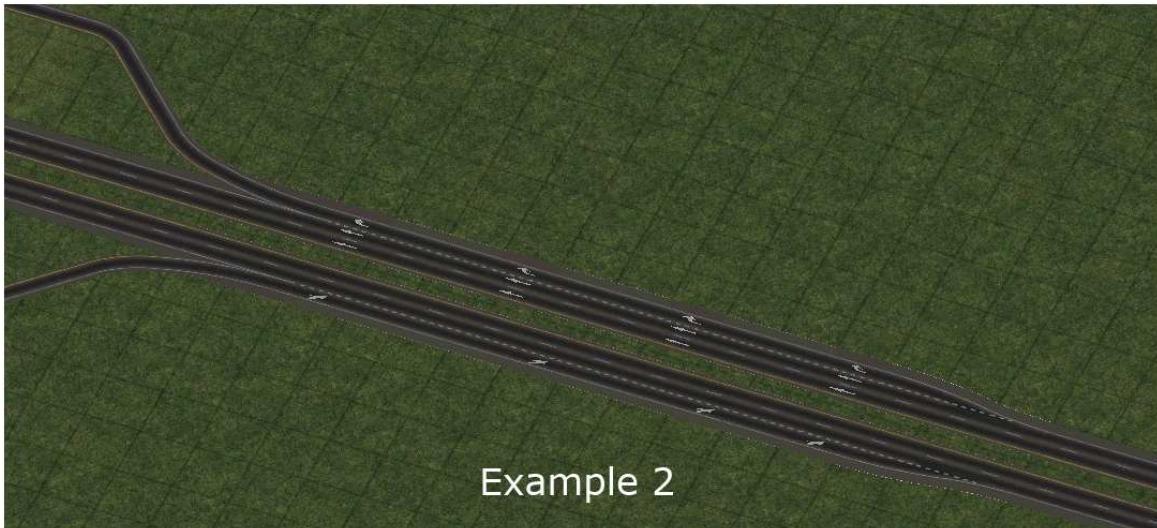
First, plop down the NEL CPs over the RHW by the known method described in the previous section. Then plop the Ramp OverPlops over the existing ramp. The result:



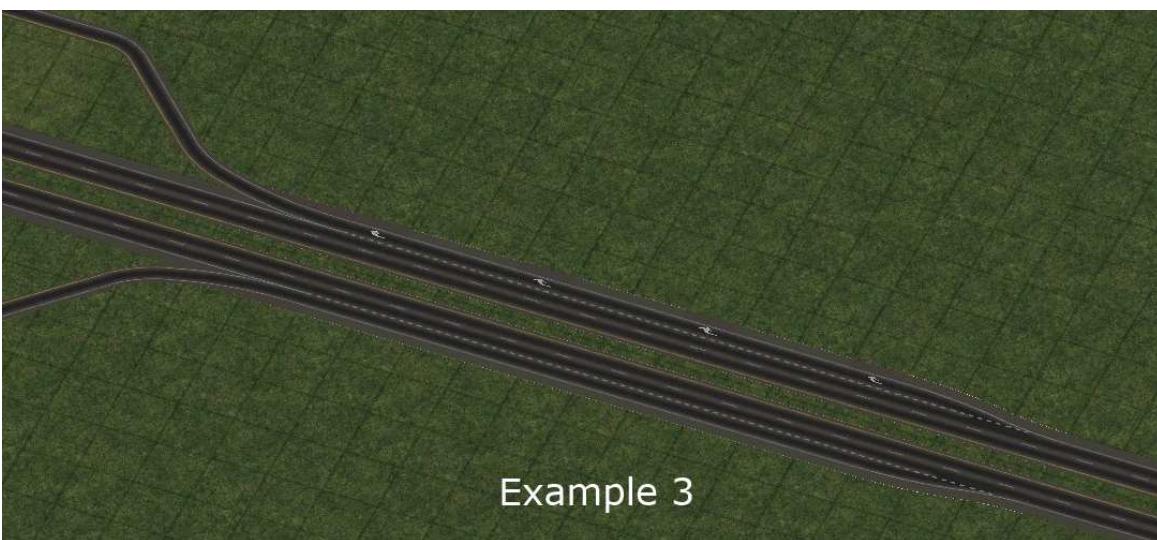
- **Adding arrows**

If you want to or as a finishing touch, you can add arrows on the exit lanes. Adding arrows can provide a visual indicator to where traffic is going. You can try out various styles. Here are a few examples:





Example 2



Example 3

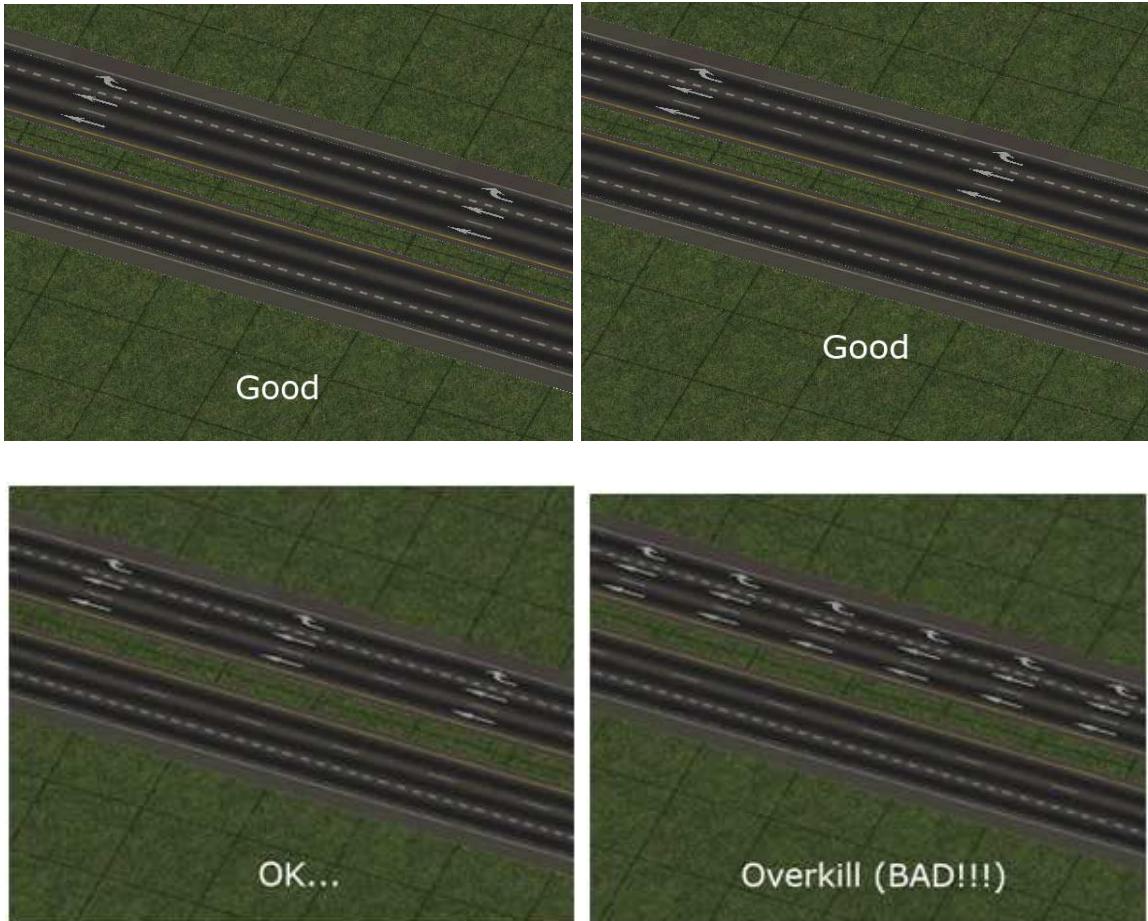


If you accidentally place the wrong type of CP or if you want to change the markings, you can place a different one directly on top of the first.

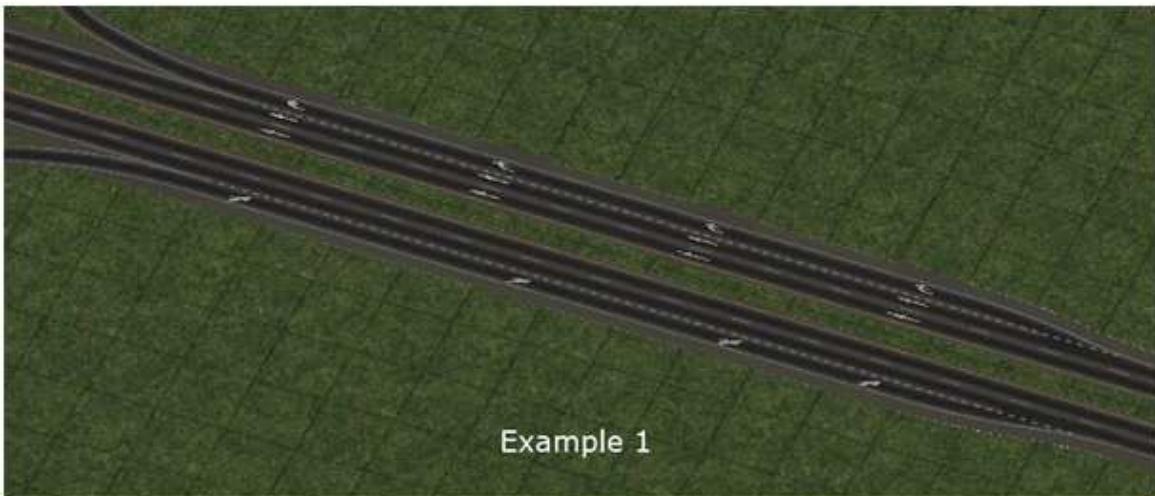


PROTIP: Dedicate a test region or test city where you can freely build using whatever you want. You can experiment with what kinds of markings you want to use, as well.

An ideal spacing of one arrow piece every 3 to 4 tiles looks the best. 2 tiles apart is still okay, but is not preferred. Avoid placing the same arrow pieces every tile, since this is overkill.

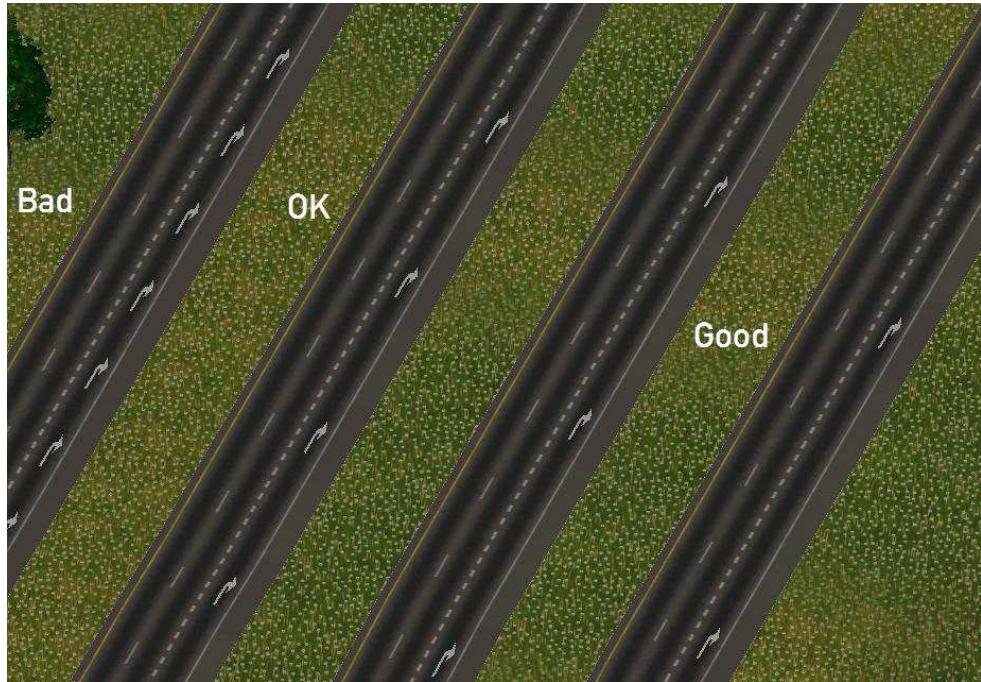


Lane reduction markings don't need to have the same spacing throughout. To signal drivers to merge lanes soon, the markings can become progressively closer.





Example 2



- **Other markings**

There exist other markings that can be used other than for acceleration/deceleration lanes. These come in the form of RHW-2 cosmetic pieces and C-network HOV lanes.

RHW-2 Cosmetic Pieces can be used to add a rural feel to the RHW-2 network itself. The appearance of these markings will vary depending on what RHW textures you have installed, but these are dashed by default.



The HOV cosmetic pieces deploy HOV markings to the C-networks. These markings are strictly eyecandy and actually serve no use other than just having HOV markings. In real-life, this is where **high-capacity vehicles (HOVs)** or **carpoolers** would drive along. These pieces are designed to be placed on the median of both the RHW-6C and RHW-8C. There are also markings for the median, such as **block markings** and **arrows**.



- **Alternative transitions**

Sometimes it's not preferred to end the outside lane of a highway. It's quite common in Europe when highways narrow down using no acceleration or deceleration lanes; instead, the innermost lane ends and

merges with the next innermost lane. It's easier for fast vehicles to merge with slow ones than the other way around. There is a piece for that in the CP TAB-ring to serve this function.

NOTE: These pieces can't be plopped over existing transitions, since they are twice as long as regular transitions. You'll need to bulldoze any other transitions you may have to make room for these.



- **Achieving Realism**

The following section contains excerpts from the **RHW Seminar** "Building Real Highway Networks LIKE A BOSS!", and has been adapted accordingly to fit into the manual.

There are hundreds of ways to achieve a sense of realism, which is one of the ultimate goals of using the RealHighway. For users comfortable with using the RHW, you can read this section on how to create realistic designs.

If you are a beginner, you may want to shy away from some of these tips until you are more comfortable. It is okay that you may build something that you'll think looks crummy later on; after all, even RHW masters have to begin somewhere.

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- **Bigger can be better**

Considering the simple fact that the default Maxis Highways are 50% **underscale**, this leads to a drastic size constraint when attempting to build something whose size is on par with that of MHW, especially when constructing a custom interchange. **Do not try to make something as small as the MHW interchanges**; instead, make something that's at least twice the size of the MHW interchanges. This provides extra elbow room to allow for expansion, and extra elbow room overall.



More elaborate interchange designs may need to be three times the size of an MHW interchange, or even greater.



Interchange by Ganaram Inukshuk

This doesn't mean that space can't be conserved. A little bit of creativity and experience can yield some fairly compact results.

- **Use the terrain to your advantage**

Many seasoned RHW users will recommend the use of a **slope mod**, as this will prevent building RHWs that are far too steep.

If you do not have a slope mod that works with RHW or if you wish to create a smoother slope, you can smoothen out the terrain by dragging out a different network first, such as a Rail-type network.



Using Rail to smoothen the ground

Additionally, you can use the terrain, such as shown below, to create an **earthen ramp**. This is a more rural and more natural-looking alternative to using a height transition. Building an artificial incline out of concrete and steel is typically more expensive than moving enough earth to create a nicely-formed ramp.



- **Make things smooth**

Wherever possible, use **wide-radius curves** or **FARHW**. This makes the appearances of RHW setups to be less blocky and more appealing. Cars moving at 60 to 80 mph (95 to 130 km/h) can't possibly make a turn that only takes up two tiles (5600 square feet or 512 square meters), and whose turn-radius is just as less.

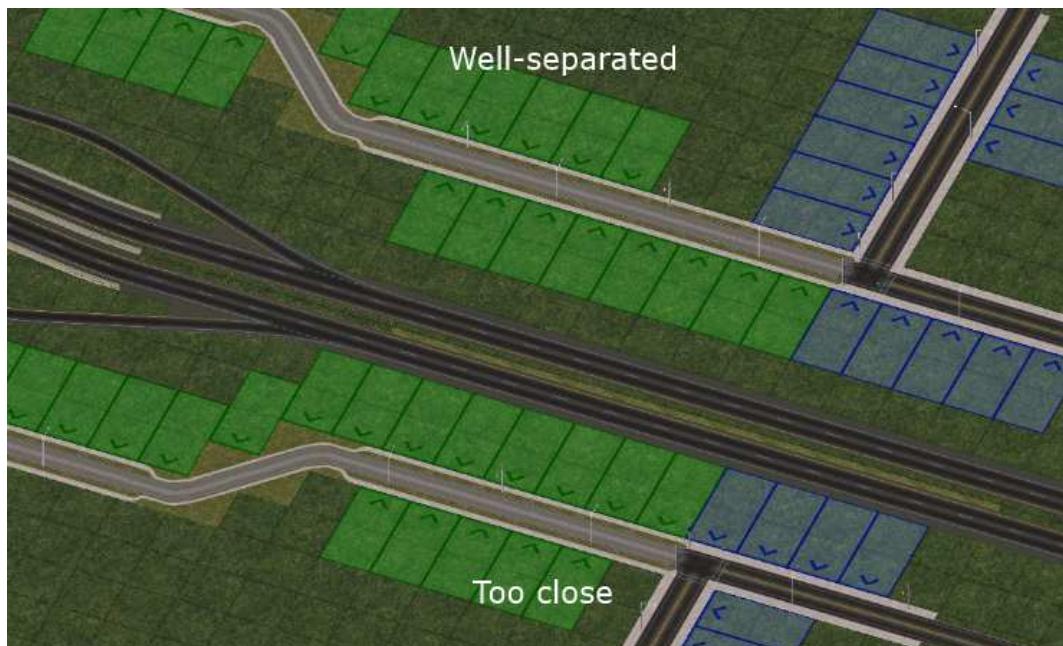


NOTE: It may not be possible to smooth out certain networks, since the curve pieces for such networks

may have not been made. This is the case with the RHW-3, RHW-6S, and the single-tile elevated networks. Networks wider than RHW-6S overall will not have any curves at all (except for the RHW-6C, which has FARHW curves), though the widened turn-radius for their respective 45-degree bends is still fairly wide enough.

- **Provide elbow room**

Give your highways and interchanges enough **elbow room**. Avoid placing zoning close to your highways. This is typically non-ideal in real-life, as it results in **noise pollution**.



NOTE: Placing zones too close to an RHW brings up an additional complication in that some puzzle pieces and starters contain a Road component, which will rotate zones towards those tiles and away from where you want them to be.

A general note overall is to provide your highways with at least one or two tiles of **extra space** along the sides. This reserves space for when you need to widen your highways. This also provides space for **third-party lots**, such as signs, highway walls, foliage, and lights, which can beautify and illuminate a highway. After all, who wouldn't want to make driving safe and remotely pleasing?



- **Avoid weaving**

Whenever possible, space your interchanges far apart, ideally 64 tiles (about 1km), though shorter distances can be managed. If you construct two interchanges close too close to each other, this can result in **weaving**. Weaving in real-life is where traffic coming on and off both ramps conflict with each other. Making these weaving lanes long enough will provide enough time for traffic coming on and off to properly mix in and out with main traffic. However, this may not always be avoidable.



Additionally, try to avoid interchanges that have built-in weaving lanes (Cloverleaf interchanges for example). However, if these interchanges are intended for an area where there is less traffic overall, then this may be permissible.

If you have to place interchanges closer together, or if you want to separate weaving lanes, try having a **collector-distributor** system (or **Multi-RHW**), as outlined in **Highway Layouts**. This moves much of the weaving off of the main lanes. There are both elegant and elaborate solutions.



- **Know what to build**

Rural and urban areas may require different construction paradigms, as listed below:

- Rural
 - Bigger interchanges can be built because there's less land that's already taken. Earthen ramps can be constructed for the same reason.
 - Pollution levels may be at tolerable levels.
 - Lighting (tower lights) and other beautification is typically not necessary; the surrounding environment may be enough.
 - Lower traffic means that highways don't need to be as wide.
 - Interchanges can be of simple design, and don't need to move much traffic (Diamonds, Cloverleafs).
- Urban
 - More land has to be devoted towards buildings, so there may not always be space for highways. For this reason, smaller interchanges are the way to go.
 - Noise and air pollution are an inevitable reality. Reducing both as much through highway walls and foliage as possible is a must.
 - Lighting is a necessary night-time accessory. Beautification is also necessary to make a highway less of a visual nuisance.
 - More traffic entails bigger highways.
 - Interchanges may need to be quite complex to move high volumes of traffic (Parclos, Stacks).

- **Current Version Limitations**

The RHW is extensively tested and even still, there may be features that may not be fully stabilised. Keep this in mind as you build up your infrastructures. This includes, but not limited to, the following:

- Certain adjacent RHW-RHW overpasses may not be stable and deconvert back into RHW-2.
- Flex Items cannot be placed in tandem, such as a FlexHeight Transition placed directly after a FlexRamp, or two FlexHeight Transitions in tandem with one another. In these cases, be sure to leave at least a one-tile gap between the two pieces.
- Diagonal RHW overpasses with diagonal NWM networks two tiles wide or wider are currently not possible.
- Placing a Flex item's construction tile too close to already-plopped Flex Item and bulldozing the construction tile may destroy the already-plopped Flex Item.

Don't expect everything to work the first time around; some features may be newly-introduced and not thoroughly fleshed-out, as these features are to be expanded in later versions. Be prepared to try alternate construction methods.

Go forth and build.

- **List of Items**

The following items are included in the RHW, and are listed by Menu Buttons.

- **Starters and Fillers**

- L0 RHW-4 Starter
- L0 RHW-3 Starter
- L0 MIS Starter
- L0 RHW-6S Starter
- L0 RHW-6C Starter
- L0 RHW-8S Starter
- L0 RHW-8C Starter (can be rotated for RHW-7C)

- L0 RHW-10S Starter
- L1 RHW-2 Starter
- L1 RHW-4 Starter
- L1 RHW-3 Starter
- L1 MIS Starter
- L1 RHW-6S Starter
- L1 RHW-6C Starter
- L1 RHW-8S Starter
- L1 RHW-8C Starter (can be rotated for RHW-7C)
- L1 RHW-10S Starter
- L2 RHW-2 Starter
- L2 RHW-4 Starter
- L2 RHW-3 Starter
- L2 MIS Starter
- L2 RHW-6S Starter
- L2 RHW-6C Starter
- L2 RHW-8S Starter
- L2 RHW-8C Starter (can be rotated for RHW-7C)
- L2 RHW-10S Starter
- L3 RHW-4 Starter
- L3 MIS Starter
- L3 RHW-6S Starter
- L4 RHW-4 Starter
- L4 MIS Starter
- L4 RHW-6S Starter
- <>

- **Neighbour Connection Pieces**

- RHW Invisible Loop Connector
- RHW-4 Neighbour Connector
- MIS Neighbour Connector
- RHW-6S Neighbour Connector
- ERHW-4 Neighbour Connector
- RHW-8S Neighbour Connector
- RHW-10 Neighbour Connector
- EMIS Neighbour Connector
- RHW-6C Neighbour Connector
- RHW-8C Neighbour Connector
- ERHW-6S Neighbour Connector
- ERHW-6C Neighbour Connector

- **Ramp Interfaces**

- Diag RHW-4 Type A1
- Diag RHW-4 Type B1
- RHW-4 Type A1 Wide
- RHW-4 Type E1 Wye
- RHW-2 Type B1 Dual
- RHW-2 Type D1 Wye
- RHW-2 Type D1 Folded
- RHW-2 Type E1 Wye
- RHW-6S Type A1 Wide
- RHW-6S Type A2
- RHW-6S Type B2
- RHW-6C Type D1 Dual Shift

- RHW-8S Type D1 Dual Shift
- RHW-6C Type D1 Dual Inside Shift
- RHW-8S Type D2
- RHW-8S Type E2
- RHW-10 Type D2
- RHW-10 Type E2
- DDRHW-4 Type A1

- **Curves**

- Dual RHW-4 Curve
- RHW-4 Outer Curve
- RHW-4 Inner Curve
- RHW-4 S-Curve
- Dual RHW-4 S-Curve
- MIS S-Curve 1
- MIS 45-Curve 1
- MIS 45-Curve 2
- MIS 90-Curve
- RHW-2 S-Curve
- RHW-2 45-Curve
- RHW-2 90-Curve (Large)
- RHW-2 90-Curve (Small)
- RHW-3 S-Curve
- RHW-3 45-Curve

- **FARHW Items**

-

- **FARHW Curves**

- FARHW-2 Straight Piece
- FARHW-2 Short Curve
- FARHW-2 Long Curve
- FARHW-2 to Diag RHW-2 Curve
- FARHW-4 Straight Piece
- FARHW-4 Short Outer Curve
- FARHW-4 Short Inner Curve
- Dual FARHW-4 Straight Piece
- Dual FARHW-4 Short Curve
- FARHW-4 to Diag RHW-4 Outer Curve
- FARHW-4 to Diag RHW-4 Inner Curve
- FARHW-6S Straight Piece
- FARHW-6S Short Outer Curve
- FARHW-6S Short Inner Curve
- FARHW-6C Half Piece
- FARHW-6C Short Curve
- FARHW-6C to Diag RHW-6C Curve
- FARHW-8C Half Piece
- FARHW-8C Short Curve
- FARHW-8C to Diag RHW-6C Curve
- FAMIS Straight Piece
- FAMIS Short Orthogonal Boomerang Curve
- FAMIS Short Outer Curve
- FAMIS Short Inner Curve
- FAMIS to Diag MIS Curve
- FAMIS Long Outer Curve

- FAMIS Long Inner Curve

- **FARHW Ramps**

- MIS Type C1 Ramp
- RHW-2 Type C1 Single Ramp
- RHW-2 Type C1 Dual Ramp
- RHW-4 Type C1 Outside Ramp
- RHW-4 Type C1 Inside Ramp
- Diag RHW-4 Type C1 Ramp
- RHW-4 Type F1 Ramp
- RHW-6S Type C1 Ramp
- RHW-6S Type F1 Ramp
- RHW-6C Type C1 Ramp
- RHW-8S Type C1 Ramp
- RHW-8S Type F1 Ramp
- RHW-8C Type C1 Ramp
- RHW-8C Type F1 Ramp
- RHW-6S Type C2 Ramp
- RHW-8S Type C2 Ramp
- RHW-8S Type F2 Ramp
- RHW-8C Type C2 Ramp
- RHW-10C Type F1 Ramp
- RHW-10C Type C2 Ramp
- RHW-10C Type F2 Ramp

- **FARHW Intersections and Transitions**

- FARHW-4 to FAMIS Transition A
- FARHW-4 to FAMIS Transition B
- Fractional-Angle Full Diamond RHW-4/AVE-4 Type A

- Fractional-Angle Half Diamond RHW-4/AVE-4 Type A
- Fractional-Angle Full Diamond AVE-2/MIS Type A

- **Transitions**

- (Width Transitions begin at this point)
 - RHW-2/RHW-4 Compact Transition
 - RHW-2/RHW-4 Symmetrical Transition
 - RHW-4/RHW-6S Transition
 - RHW-6S/RHW-8S Transition
 - RHW-8S/RHW-10S Transition
 - RHW-4/RHW-6C Compact Transition
 - RHW-4RHW-6C Symmetrical Transition
 - RHW-6C/RHW-6S Compact Transition
 - RHW-6C/RHW-6S Symmetrical Transition
 - RHW-6C/RHW-8C Transition
 - RHW-6C/RHW-8S Transition
 - MIS/RHW-4 Transition
 - RHW-2/RHW-3 Transition
 - RHW-2/WRHW-2 Transition
 - WRHW-2/RHW-3 Transition
 - RHW-3/RHW-4 Transition A1/A2
 - RHW-3/RHW-4 Transition B1/B2
- (Height Transitions and OnSlope Transitions begin at this point)
 - L0-L2 RHW-4 Height Transition ON/OFF
 - L0-L2 RHW-4 On-Slope Transition ON/OFF
 - L0-L2 RHW-6S Height Transition ON/OFF
 - L0-L2 RHW-6S Height Transition On-Slope ON/OFF

- L0-L2 MIS Height Transition ON/OFF
 - L0-L2 MIS Starterless Height Transition ON/OFF
 - L0-L2 MIS On-Slope Transition ON/OFF
 - L0-L2 RHW-2 Height Transition
 - L0-L2 RHW-2 T-OnSlope Transition
 - L0-L2RHW-2On-Slope Transition
 - L0-L2 RHW-6C Height Transition
 - L0-L2 RHW-6C OnSlope Transition
 - L0-L2 MIS Curved Height Transition ON/OFF
 - L0-L2 MIS Curved Starterless Height Transition ON/OFF
 - L2-L3 RHW-4 Starterless Height Transition ON/OFF
 - L0-L3 RHW-4 Starterless Height Transition
 - L2-L3 MIS Starterless Height Transition ON/OFF
 - L0-L3 MIS Starterless Height Transition
 - DDRHW-4/RHW-4 Connector
-
- **FlexRamps**
 - Type A1 FlexRamp
 - Type B1 FlexRamp
 - **FlexFlys and FlexCurves**
 - L2 MIS FlexFly Type A1 and A2
 - L0 MIS FlexCurve Type A1
 - **FlexTransitions**
 - L0-L1 FlexHeight Transition
 - L0-L1 FlexOnSlope Transition
 - **Cosmetic Pieces**
 - **1-Tile CPs**

- RHW-2 Dashed-Line Cosmetic Piece
- RHW-2 Solid/Dashed-Line Cosmetic Piece
- RHW-3 Lane Reduction Left 1
- RHW-3 Lane Reduction Left 2
- RHW-3 Dotted Lane Markings
- RHW-3 Ramp Arrows 1
- RHW-4 Lane Reduction Left 1
- RHW-4 Lane Reduction Right 1
- RHW-4 Lane Reduction Left 2
- RHW-4 Lane Reduction Right 2
- RHW-4 Exit Lane Markings 1
- RHW-4 Exit Lane Markings 2
- RHW-4 Exit Lane Markings 3
- RHW-4 Exit Lane Markings 4
- RHW-4 Ramp Arrows 1
- RHW-4 Ramp Arrows 2
- RHW-4 Narrow Exit Lane-Transitions
- RHW-4 Narrow Exit Lane1
- RHW-4 Narrow Exit Lane2
- RHW-4 Narrow Exit Lane3
- RHW-4 Narrow Exit Lane OverPlop Ramp-A
- RHW-4 Narrow Exit Lane OverPlop Ramp-A-Wide
- RHW-4 Narrow Exit Lane OverPlop Ramp-B
- RHW-6S Lane Reduction Left 1Markings Cosmetic Piece
- RHW-6S Lane Reduction Left Markings Cosmetic Piece 2
- RHW-6S Lane Reduction Right 1Markings Cosmetic Piece

- RHW-6S Lane Reduction Right Markings Cosmetic Piece 2
 - RHW-6S Exit/Entrance Lane Markings Cosmetic Piece 1
 - RHW-6S Exit/Entrance Lane Markings Cosmetic Piece 2
 - RHW-6S Exit Lane Markings Cosmetic Piece 01
 - RHW-6S Exit Lane Markings Cosmetic Piece 02
 - RHW-6S Exit Lane Markings Cosmetic Piece 03
 - RHW-6S Exit Lane Markings Cosmetic Piece 04
- **2-Tile CPs**
 - RHW-8S Lane Reduction Left Markings Cosmetic Piece
 - RHW-8S Lane Reduction Right Markings Cosmetic Piece
 - RHW-8S Exit/Entrance Lane Markings Cosmetic Piece 01
 - RHW-8S Exit Lane Markings Cosmetic Piece 01
 - RHW-8S Exit Lane Markings Cosmetic Piece 02
 - RHW-8S Exit/Entrance Lane Markings Cosmetic Piece 02
 - RHW-8S Exit Lane Markings Cosmetic Piece 03
 - RHW-8S Exit Lane Markings Cosmetic Piece 04
 - RHW-10S Lane Reduction Left 1
 - RHW-10S Lane Reduction Left 2
 - RHW-10S Lane Reduction Right 1
 - RHW-10S Lane Reduction Right 2
 - RHW-10S Exit Lane Markings 1
 - RHW-10S Exit Lane Markings 2
 - RHW-10S Exit Lane Markings 3
 - RHW-10S Exit Lane Markings 4
 - RHW-10S Exit Lane Markings 5
 - RHW-10S Exit Lane Markings 6
 - RHW-10S Exit Lane Markings 7

- **3-Tile CPs**

- RHW-6C HOV Lanes 1
- RHW-6C HOV Lanes 2
- RHW-6C Inside Exit Lanes 1
- RHW-6C Inside Exit Lanes 2S
- RHW-6C Inside Exit Lanes 2AS
- RHW-6C Lane Reduction Left 1
- RHW-6C Lane Reduction Left 2

- **CP Transitions**

- RHW-4/RHW-6S Transition Style B
- RHW-4/RHW-6S Transition Style C
- RHW-4-to-RHW-6S Transition Style D
- RHW-6S-to-8S Transition Style B
- RHW-6S-to-8S Transition Style C
- RHW-6S-to-8S Transition Style D
- RHW-8S-to-10S Transition Style B
- RHW-8S-to-10S Transition Style C
- RHW-8S-to-10S Transition Style D

- **Specialised Crossing Pieces**

- FlexSPUI Type A
- AVE-4 DDI Crossing
- Volleyball Quadrant Pieces
- RHW-TIA Flex Crossing Piece

- **Other Pieces**

- **Road/RHW Pieces**

- Road-over-RHW-4 Orthogonal/Orthogonal
- Road-over-RHW-4 Diagonal/Orthogonal

- Road-over-RHW-4 Orthogonal/Diagonal
- Road-over-RHW-4 Diagonal/Diagonal
- Road-over-RHW-2 Orthogonal/Orthogonal
- Road-over-RHW-2 Diagonal/Orthogonal
- Road-over-RHW-2 Orthogonal/Diagonal
- Road-over-RHW-2 Diagonal/Diagonal
- Road-over-MIS Ramp Orthogonal/orthogonal
- Road-over-RHW-6S Orthogonal/Orthogonal
- Road-over-RHW-6C Orthogonal/Orthogonal
- Road-over-RHW-8S Orthogonal/Orthogonal
- Road-over-RHW-8C Orthogonal/Orthogonal
- Road-over-RHW-10S Orthogonal/Orthogonal
- Road-over-RHW-3 Orthogonal/Orthogonal
- Elevated Road/EMIS +-Intersection
- Elevated Road/EMIS T-Intersection
- FLUPs Underpass-Under RHW-MIS/RHW-2/RHW-4/RHW-6C
- FLUPs Underpass-Under RHW-6S/RHW-8S/RHW-10
- FLUPs RHW-2 Ramp

• **OWR/RHW Pieces**

- OWR-over-RHW-4 Orthogonal/Orthogonal
- OWR-over-RHW-2 Orthogonal/Orthogonal
- OWR-over-MIS Ramp Orthogonal/Orthogonal
- OWR-over-RHW-6S Orthogonal/Orthogonal
- OWR-over-RHW-6C Orthogonal/Orthogonal
- OWR-over-RHW-8S Orthogonal/Orthogonal
- OWR-over-RHW-8C Orthogonal/Orthogonal
- OWR-over-RHW-10S Orthogonal/Orthogonal

- OWR-over-RHW-3 Orthogonal/Orthogonal
- Elevated OWR/EMIS +-Intersection
- Elevated OWR/EMIS T-Intersection
- **AVE/RHW Pieces**
 - Avenue-over-RHW-4 Orthogonal/Orthogonal
 - Avenue-over-RHW-2 Orthogonal/Orthogonal
 - Avenue-over-MIS Ramp Orthogonal/Orthogonal
 - Avenue-over-RHW-6S Orthogonal/Orthogonal
 - Avenue-over-RHW-6C Orthogonal/Orthogonal
 - Avenue-over-RHW-8S Orthogonal/Orthogonal
 - Avenue-over-RHW-8C Orthogonal/Orthogonal
 - Avenue-over-RHW-10S Orthogonal/Orthogonal
 - Avenue-over-RHW-3 Orthogonal/Orthogonal
 - Avenue/MIS +-Intersection Avenue/MIS T-Intersection
 - Avenue Type A1 RHW-MIS Exit/Entrance Ramp
 - Avenue Type B1 RHW-MIS Exit/Entrance Ramp
 - Avenue Type C1 RHW-MIS Exit/Entrance Ramp
- **Rail/RHW Pieces**
 - Rail-over-RHW-4 Orthogonal/Orthogonal
 - Rail-over-RHW-2 Orthogonal/Orthogonal
 - Rail-over-MIS Ramp Orthogonal/Orthogonal
 - Rail-over-RHW-6S Orthogonal/Orthogonal
 - Rail-over-RHW-6C Orthogonal/Orthogonal
 - Rail-over-RHW-8S Orthogonal/Orthogonal
 - Rail-over-RHW-8C Orthogonal/Orthogonal
 - Rail-over-RHW-10S Orthogonal/Orthogonal
 - Rail-over-RHW-3 Orthogonal/Orthogonal

- **Bridges**

- MIS:
 - Plain L0 MIS Bridge
 - Plain L2 MIS Bridge

- RHW-2:
 - Plain L0 RHW-2 Bridge
 - Plain L2 RHW-2 Bridge
 - L0 RHW-2 Steel Arch Bridge

- RHW-3:
 - (None available at the moment)

- RHW-4:
 - Plain L0 RHW-2 Bridge
 - L0 RHW-4 Steel Arch Bridge
 - L0 RHW-4 Steel Girder Bridge (By **Choco**)
 - Dual L0 RHW-4 Steel Girder Bridge (MHW Bridge) (By **Choco** and **MandelSoft**)
 - Dual RHW-4 Suspension Bridge (By **Blue Lightning**)

- RHW-6S:
 - L0 RHW-6S Concrete Arch Bridge (By **Choco**)
 - Dual L0 RHW-6S Concrete Arch Bridge (MHW Bridge) (By **Choco** and **MandelSoft**)
 - Dual L0 RHW-6S Cable-Stayed Bridge (MHW Bridge) (By **MandelSoft**)
 - Dual L0 RHW-6S Steel Arch Bridge (MHW Bridge) (By **MandelSoft**)

- RHW-8S:
 - L0 RHW-8S Steel Undertruss Bridge (MHW Bridge) (By **Choco**)

- RHW-10S:
 - L0 RHW-10S Concrete Arch Bridge (MHW Bridge) (By **Choco**)

- DDRHW-4:

- Plain DDRHW-4 Bridge

• Frequently Asked Questions (FAQs)

This section answers frequently asked questions that may crop up from either updating RHW, from using RHW in general, or from creating third-party addons for RHW. It is recommended for all players to read this section, as it may answer some questions that you, the player, may have.

If you still have any questions, then feel free to ask.

- **Questions Regarding P57 and the Monolithic NAM**
- **What is Project 57 and the Monolithic NAM?**

Project 57 (abbreviated P57) is an effort to completely redesign the "under the hood" workings of the RealHighway Mod. It entails completely re-aligning the RealHighway's Instance ID (IID) scheme to make it function as a more coherent whole, with the bulk of the IID range being moved to the 0x57##### range (hence the name), reorienting certain network pieces for consistency, ultra-stabilisation of all networks, and to allocate the necessary ranges to implement the Multi-Height System.

The **Monolithic NAM** (or MonoNAM) is a new system that will do away with having separate NAM plugins being separate downloads (RHW, NWM, SAM, etc), and will instead have all these plugins be a part of the NAM itself in one single download. These plugins will still be optional as before, and can be selected or deselected accordingly in the NAM installer.

- **Why is P57 being undertaken?**

The RealHighway's technical backend had become very burdensome and highly disorganised to work with, making it more difficult to add new functionality to the mod and stabilize items. The former RHW IID assignments were, in total, a mishmash of several different, unrelated IID schemes that were difficult to navigate and had no common pattern whatsoever. It was decided that P57 was necessary to properly facilitate some of the major functionality planned for releases beyond Version 5.0/NAM 30.

NOTE: Project 57 deals strictly with the RealHighway, and aside from "crosslinkage" with other plugins (NWM, HSRP, SAM), it will not involve improvements to other NAM Plugins.

- **How come there are some functionalities missing?**

P57 is a big undertaking, and given the time we had and how long it was since the previous NAM release, it was determined that the efforts of P57 may span an additional NAM development cycle.

- **Why was the Monolithic NAM implemented?**

Although the **Modular NAM** paradigm was to allow independent projects to be released without a new NAM to be released each time (and the NAM Essentials would be the only necessary download), these projects have always been released in conjunction with a new NAM version, rendering the Modular NAM

paradigm useless.

Another major problem with having a Modular NAM is mixing different versions of the NAM and its plugins, such as running RHW Version 5.0, which requires NAM Version 30, with NAM Version 29, which can only run RHW Version 4.1. A Monolithic NAM will eliminate the problem.

The **Monolithic NAM** has been designed so that all **necessary downloads** (NAM Core, NAM Plugins, transit stations, slope mods, texture mods) can be included in one package. The **NAM Hotfix** is the only other necessary download, but only when enough bugs are present that they have to be fixed and distributed en masse.

The DBE will be the only separate NAM plugin, due to its terrain-destroying nature.

- **Where is the RHW?**

The RHW, in short, is no longer available as an independent plugin, and is included with the NAM itself.

- **What will this mean for pre-existing cities? Will I need to demolish anything?**

You'll be able to use the RHW just as you always have. Most of the changes to the mod as part of the P57 effort won't be readily apparent to non-modders, aside from the vastly improved stability and addition of new functionality. In short, you don't need to demolish anything. Additionally, a compact but very strategically-designed RUL-2 code routine will convert older RHWs to the new standards, allowing you to upgrade your existing systems to the new specifications.

- **Will third-party mods still work with the RHW?**

Certain mods, particularly **T21s** and **textural mods** made prior to NAM 31, will only work on pre-P57 instances of RHW. Any pre-P57 RHWs redrawn while using NAM 31 will break the function of these mods, because these mods will only work for RHW Version 5.0 and below.

Additionally, it is up to the original authors of these mods to update them. If these mods are already updated to P57 specifications, then there should be no problem.

- **Questions Concerning Old Versions and Updating**

- **Should I uninstall any previous versions of the RHW, and if so, which ones?**

It's best to uninstall RHW Version 5.0 and earlier. Simply locate the RealHighway folder and delete/remove it. To uninstall RHW Version 3.0, remove the folder called **Rural Highway Mod** from your NAM folder.

- **I can't place the RHW puzzle pieces, and I'm getting a gray mouse cursor or red arrow, or am unable to use the RHW Bridges. What's wrong?**

The only thing which causes this issue is having outdated versions of the NAM or outdated versions of any of the NAM's plugins conflicting with your current NAM installation. It is suggested that you delete your NAM folder from your Plugins, then run the **BSC Cleanitol** definition included in the NAM Version 31 Download, then reinstall the NAM.

If you have a DatPacked **Network Addon Mod.dat** file, it's possible it is outdated and thus, may be the root of your problem. Simply delete the DatPacked file, and it should solve the issue.

- **I had some Version 5.x items in my city and now they disappeared. What Gives?**

This means that you don't have the legacy support for version 5.0 installed. Re-install the Real Highway Mod and make sure you checked on the legacy support checkbox at the component selection screen.

- **I've got white arrows on the RHW Neighbour Connector Pieces. What do they mean and how should I orient the pieces?**

The RHW Neighbour Connector pieces should not have white arrows on them. If you are an RHD user and are seeing them, you have Version 4.0 files still in your Plugins folder which need to be removed. If you are an LHD user, try moving **RealHighwayMod_NeighbourConnectors.dat** into your z-Left Hand Version subfolder within your RHW installation folder (generally Plugins\Network Addon Mod\Real Highway Mod) to eliminate them.

- **Why am I getting RHW Version 1.x/2.x/3.x/4.x textures showing up?**

You still have Version 3.0 (or Version 3.2) files sitting in your Plugins folder, which is overriding your NAM 31 installation. The file structure has changed beginning with Version 4.0, so installing it will not automatically overwrite your previous installation. As such, you must remove/delete any previous RHW files before installing the current version (they should be located in Network Addon Mod\Rural Highway Mod--simply delete the Rural Highway Mod folder).

In case you use the Euro textures and you see buggy transitions (like missing tiles), this means that you still have the RHW Euro Textures Mod v4.0 Interim version installed. This also needs to be removed.

- **Questions Concerning Phased-out Items**

- **What happened to the old Ramp Interfaces, Transitions, and Overpass Pieces?**

A large number of the old puzzle-based Ramp Interfaces, Height and On-slope Transitions, and Overpass Pieces have been phased out and replaced as a means of decluttering the menu buttons. With the Ramp Interfaces and certain Transitions, they have been replaced with Flex versions, and with the Overpass Pieces, these have all been made draggable.

There are, however, a number of pieces, specifically the Ramps and Transitions that are considered too specialised to convert to a Flex setup, and have been left as is.

- **What happened to draggable DDRHW?**

Due to unforeseen complications involving the use of Rail as a network to carry car traffic, DDRHWS are now MHW-based and are placed using helper pieces, akin to the Diagonal Street helper pieces.

The primary issue with using Rail is that instead of inheriting the capacity of Rail, it instead falls back to the **capacity of Road**, thereby reducing the capacity of DDRHWS overall instead of increasing it to twice that of RHW. Because it is not in the interest of the NAM Team to create non-functional items, support for rail-based DDRHW has been removed and all pre-existing instances will have to be replaced.

- **Will I still be able to use any of the old pieces?**

Not likely.

- **Questions Concerning Tunnels and Bridges**

- **Are tunnels possible? Why aren't tunnels possible?**

Tunnels are hard-coded in the game and therefore we cannot add new tunnels.

- **What about bridges? Aren't there bridges than RHW-4?**

Bridges are however possible, but you can't build them side by side. We use MHW bridges as a work-around for two-tile networks.

- **Questions Concerning the Regional Transport View**

- **Why are highways black instead of red?**

Because of the way this workaround functions, the red colour would show up as a halo around diagonal roads, bridges and certain puzzle pieces. The black colour does as well, but is less noticeable.

- **Why do the diagonals look weird?**

Again, because of the way this workaround functions, the diagonal roads, avenues and streets show up intermingled with the highway colour. This is not possible to fix, but the map colours were chosen to make it less noticeable than other colour combinations.

- **Why are all my roads black?**

If you do not open any of the dataviews before saving the game, the map will be rendered incorrectly resulting in all car traffic networks showing up as the highway colour.

- **Questions Regarding LHD Functionality**

- **Is the RHW LHD-compatible?**

Yes. Actually, according to NAM Team Policy, everything that gets added to the NAM has to be LHD-compatible.

- **What about bridges?**

Yes. With regards to certain bridges, particularly those that are distributed independently of the NAM, they may not have LHD support, but will be given LHD support as well.

- **Questions Concerning General Features**

- **What is the MIS?**

The term "MIS" has two meanings. The term can refer to the **Modular Interchange System**, which is the system of Ramp Interfaces and the MIS Network used to create custom interchanges, or the **MIS Network** itself.

- **What is the MHS?**

The MHS stands for the **Multi-height System**, which allows for multiple height levels of RHW to exist. The traditional height level of 15 meters will be referred to L2, the old name of double-height (30m) will be referred to as L4, the once-proposed half-height (7.5) as L1, and 22.5 (the midway point between 15 and 30 meters) as L3. When referring to **ERHW**, note that you have to say the height level; it's actually

no longer sufficient to just say ERHW.

- **Am I able to create diagonal overpasses using RHW?**

Yes. A development in NAM 31 has been able to overcome a fundamental issue that prevented multiple same-network crossings to be drawn properly, and as such, most if not all RHW crossings can be drawn freely.

- **Am I able to draw diagonal networks wider than RHW-4, 90-degree bends and diagonals wider than RHW-4, and elevated networks wider than RHW-4?**

Yes to all of the above.

- **What about traffic signals for the RHW?**

Generally speaking, they will not be implemented on the default, draggable network segments. They will be added on select RHW Turn Lane Extension Pieces (TuLEPs) and other cosmetic pieces, both planned for future updates to the mod, however.

- **What's with the blank crossings?**

Because of the RHW's function to create limited-access roads, attempting to cross an RHW (wider than RHW-4) with another networks will create a blank degenerate intersection. These intersections are intentionally added in to allow for crossings with draggable elevated Road and elevated Heavy Rail, which is planned for a future release.

- **I've seen pictures of what looked like an RHW-4C, but I can't find it anywhere. Why isn't there an RHW-4C?**

Technically, the RHW-4 network is neither S-type nor C-type, as it was developed before the idea of S and C-networks were even conceived (though the idea of S-networks were based off of RHW-4), therefore, there is no RHW-4C. Additionally, there are no plans on ever adding an RHW-4C.

However, **Project Symphony**, which overrides the MHWs into an RHW-styled highway, features a four-lane highway that can be used as an RHW-4C.

- **Questions Concerning Network Types, Widths, and Heights**

- **What's the difference between the S and C networks?**

The S-networks is the "separable" version in that the two carriageways do not have to be adjacent, allowing for variable width medians. The C-networks are the "combined" versions, which were made to address the then-present space concerns, and only take up 3 tiles, but cannot be separated.

- **Where's the RHW-12S and RHW-10C?**

P57 has laid the groundwork for these networks, but since no ramp interfaces or puzzle pieces have been made for them and that they may not be as stable as other available networks, they have been left **deactivated** until a future release.

The **RHW-10C** uses a modularised starter that uses the RHW-6S for the outer lanes, but using the RHW-10C in the incomplete state that it's in is not recommended for the reasons listed above. The **RHW-12S**,

however, uses a new starter that cannot be accessed without manually editing the RUL-0 file and it is also not recommended using this network, either.

- **Why are there only L3 and L4 networks for MIS, RHW-4, and RHW-6S?**

This is a design decision of the NAM Team. It was reasoned that it was neither necessary nor realistic for any of the wider networks to have such high overpasses. They will still have a lot of functionality with the three height levels available, but high and wide overpasses would, in real life, simply be too expensive and therefore not realistic.

- **What about other height combinations for DDRHW?**

The L2-L3 combination was decided for DDRHW, as it would be tall enough to cross over most ground-level obstacles, such as L0 and L1 networks, and so that it would still be short enough to cross under L4 networks. Additionally, real-life double-decker highways tend to be elevated above the ground.

- **What about Ultra-Wides?**

There are a lot of technical, RUL-bound, and geometric complications that make us enforce a width limit.

First, the minimum diagonal width of a tile increases faster than the orthogonal width (starting at about

0.7 tiles for a single-tile network without overhangs and increasing by 1.4 or $\sqrt{2}$ for every tile the

orthogonal width increases in), and because of this, anything exceeding 12 lanes will not be able to fill in a massive diagonal footprint. The wider the network, the worse it becomes. This also proves to be an issue when maintaining a high capacity for such a wide network, since the paths won't be able to occupy every tile.

Secondly, the IID and RUL-2 scheme for RHW is intended to be the final revision, and to revise it to accommodate wider and wider RHWs would be far beyond necessary.

Thirdly, it was determined that having to drag out that many subsections (up to 5 for Ultra-wide C-networks, and 6 for Ultra-wide S-networks) would prove to be cumbersome.

Lastly, there aren't many Ultra-Wides in real life, and when they do appear, they don't tend to be very long, and are commonly found on mega-interchanges as merge lanes.

Having that said, there are plans to implement Ultra-Wides, but their function will be limited (orthogonal only), as will the maximum width: **RHW-16S** and **RHW-16C**. Implementing these networks still needs to be thoroughly discussed before they can be added in.

- **Questions Concerning Pathing, Traffic Behaviour, and Capacity**

- **My RHW is getting congested awfully early, or the distribution of traffic on wider RHWs is wildly uneven. What is the problem?**

Certain traffic simulators based off of the default simulator may conflict with the RHW and lower the capacity of wider RHWs.

To solve this issue, remove the conflicting plugin and instead use the NAM Simulator, from the NAM Traffic Plugin package, or design a simulator using the Traffic Simulator Configuration Tool (TSCT).

- **Why is there traffic zigzagging across wider RHWs?**

All dual-tile and triple-tile RHW networks contain **Crossover Paths** that interchange traffic between each segment of the RHW, thereby treating every segment together as a whole network. Automata generated by traffic generators have a tendency to misbehave and follow every path there is, whereas natural traffic will not. This can also be caused by an incompatible Traffic Simulator, in which case, the culprit simulator would have to be removed and replaced with one of the NAM's Traffic Simulators.

- **Do some of these networks have a greater capacity than one another, or are they just eyecandy? Does the lane count even mean anything?**

Certain networks may have a higher capacity than others. The RHW-3 has a 25% capacity boost over the RHW-2, as does the RHW-6S over the RHW-4. This is done using **Distilled Intersection Paths**, or DIPs, which trick these networks into being intersections, when properly accompanied by any one of the NAM Traffic Simulators, which has a property that boosts the capacity of intersections by 25%.

The lane count, technically speaking, is irrelevant, since SC4 calculates capacity on a per-tile basis. Still, the different RHW widths are necessary since varying highway widths are, needless to say, commonplace in real-life.

- **Why isn't there any capacity difference between the wider networks, such as the S-networks or the C-networks?**

The means of boosting the capacity of certain RHW networks entails the use of DIPs with an accompanying NAM Traffic Simulator. Having that said, the means of using crossover paths for wider RHW networks, such as the RHW-8S and the RHW-6C, means that these networks are also treated as intersections and are given the same capacity boost as well.

There is no way to control this feature so that it doesn't boost these networks, selectively or otherwise, and there is no way to increase an already-boosted network's capacity any further.

- **Why am I seeing cars climbing up and down the edge of the city tile? Is there something wrong?**

Nothing's wrong. That's an indicator that you've properly set up your neighbour connectors.

- **There are cars that are using the neighbour connector as a shortcut. Is there a way to keep that from happening?**

This would require a rework to the neighbour connector pieces, and a reintroduction to the "IN" and "OUT" pieces. In lieu of that, you may need to reconsider your interchange design.

- **Questions Concerning Naming**

- **Why the name change from "Rural Highway" to "RealHighway"?**

The name "Rural Highway Project" dates back to the project's origins back in 2005, well before many of the later innovations in the current mod had even been conceived. While it can still be used in rural areas, it has evolved into a multi-purpose highway-building tool that can be used in both rural and urban areas.

There have been proposals throughout the years to change the name from "Rural Highway" to something else at various points. RealHighway was chosen as the new name for the project because it has historical precedence, having been suggested by project founder **qurlix** back in 2006, it retains the acronym "RHW", and it removes the "rural-only" stigma.

- **Wait, I thought it's called RHM. Isn't it RHM? Why are you calling it RHW?**

RHM is a **Cities XL** mod that has the same basis as RHW, and was inspired by the RHW. However, the NAM Team has no interest in modding Cities XL, and therefore calling the RHW "RHM" simply produces confusion between both parties.

The RHW should **NEVER** be referred to as RHM for this reason. If you are looking for support for the CXL Mod RHM, then you're looking at the wrong mod. If you are looking for support for RHW, please refer to its proper name. And since we are only responsible for the development of the RHW, we can't answer questions regarding the CXL RHM.

- **Questions Concerning Textures and Texture Mods**

- **Why do some of the textures look grainier than before?**

Many of the textures and models have been reworked, and in doing so, many of them, particularly those found on overpasses and ground-level diagonals, contain new S3D settings that may make these textures slightly different.

- **I don't like how far apart the dashes are on the diagonals. How can I change it?**

There are geometric considerations that have to go into making custom textures for the new model-based diagonals. A reference on how to work with these models can be found on <>.

- **What's going on with the Euro texture end of things?**

The Euro Textures required to be updated. **MandelSoft** is working on an update for the current set to be compatible with the Project 57 overhaul.

- **What about other regional textures, such as Irish/South African?**

Unlike the Euro Textures, there's no rigid plan to do these textures due to the sheer number of textures that need to be changed (over 4000 excluding mipmaps), the lower demand for these textures, and the fact that texture modding is although related to the NAM, not inside of the scope of the main NAM and it should be done by third party modders. However, some of these members have close relations or are even part of the NAM Team.

- **With at least one texture mod available for RHW, are there plans on making a SAM-like setup for RHW?**

No. While it is a nice idea, it's simply not feasible, as it would require producing likely 3-4 times the number of puzzle pieces, transit tiles, starters, and IDs needed. Despite the incredibly efficient reorganisation efforts enacted by P57, there is simply not enough room to allocate an extra IID range to accommodate such a project, and such an effort would make RUL-0 and RUL-2 unnecessarily large, and would quickly exhaust the entire IID range allocated for the NAM.

- **Questions Concerning Scaling and Interchanges:**

- **Isn't 7.5 meters too tall for an overpass?**

Actually, due to SC4's 3D **isometric projection**, objects in-game have to be **30% taller** than they are in real-life, otherwise they'll appear squashed down. Additionally, the height clearance signs found in real life refer to the gap between the lower road deck and to the bottom of the substructure of the overpass, not how high the top of the overpass is from the lower road deck.

- **Why are the interchanges larger than Maxis Interchanges?**

Considering that each tile in-game is 16 by 16 meters, or 52 by 52 feet, the RHW's intention is to provide realistically-scaled interchanges and highways, hence the name RealHighway. Compared to the default Maxis Highways, the size difference between RHW and MHW is roughly **50%**.

Obviously, this is a game and is only made to approximate a facet of the real world, but even still, the game's default highway system and its interchanges are quite drastically underscale when compared to the game's designers' intended dimensions and to the other transit networks in-game. This also poses difficulty for any sort of interface between RHWs and Maxis Highways.

That being said, there are some setups, particularly with RHW-to-RHW interchanges, that may seem to especially place a strain on space. It is the NAM Team's intent to slowly fill this area in with creative new pieces which allow for more compact and complex interchanges while retaining some semblance of realistic scale.

- **Will "Maxis-styled" prefab/plop interchanges ever be produced for the RHW?**

No. The massive amount of time required in making one, the size limits imposed on them, the fact that they would duplicate already existing functionality, along with the rigid inflexibility of such setups and the massive number that would have to be made in order to account for all the networks included in the RHW renders the notion of plop interchanges impractical and unworkable.

For example, the number of **orthogonal-only diamond interchanges** needed is roughly the number of RHW networks there are times the number of non-RHW networks there are. The number of RHW networks that can make valid crossings is eight (RHW-2, 3, 4, 6S, 8S, 10S, 6C, 8C), and the number of networks that can interchange with RHW is four (RHW-2, Road, OWR, AVE). Restricting the RHWs to L1 and the arterial networks to L0, the number of interchanges adds up to **32**, which is still a lot of interchanges.

If differing combinations of height levels for each network are permitted (L1 non-RHW over L0 RHW, L1 RHW over L0 non-RHW, etc) and if the **NWM** were included (TLA-3, AVE-2, etc), then this number will quickly increase into the **tens of thousands**. This would quickly overload the RUL-0 file and overwhelm both the developers and the end users.

- **If there's a strict no-prefabs rule, how come I'm seeing them anyway? Where can I find these RHW Prefabs?**

The prefabs are not a part of RHW, but instead a part of **Project Symphony**. It should be noted that Project Symphony does include some semi-prefab interchanges, but the capabilities of these interchanges are very limited, as stated before. There is also one type of prefab available, but given how specialised the particular piece has to be, this may be the only exception to the no-prefs rule.

- **Where can I find tutorials for making interchanges?**

The RHW User's Manual includes a few basic tutorials on creating certain interchanges. The **RHW Interchange Guide** on **SC4Devotion** provides further tutorials on other interchange designs.

- **Questions Concerning Cross-Integration with other Networks and other NAM Plugins**

- **Are there efforts with further RHW-NWM integration?**

Currently, all of the elevated RHW networks can cross over all of the NWM networks, both orthogonally and diagonally. However, there is no support for crossings involving diagonal multi-tile NWM networks.

Additionally, there currently is no implementation to make NWM go over top RHW; this is an NWM feature, not an RHW feature, and is scheduled for a future release, likely beyond NAM 32.

- **What about transitioning between RHW and NWM?**

The RHW does contain RHW-NWM transitions, all of which are draggable. However, there are currently no transitions between OWR-1 and MIS, RHW-8S and OWR-4, and RHW-10S and OWR-5.

- **What about RHW-MHW integration?**

Because of the massive scaling differences between RHW and MHW and the general difficulty of modifying MHW models, any sort of RHW-MHW interface, such as certain transitions (RHW-6S to MHW, in particular) or MHW ramps that contain a MIS branch, is likely not going to happen.

However, the efforts made by **Project Symphony** have made MHWs into being more RHW-styled and more realistically scaled. Any sort of RHW-MHW interface can only be made through Project Symphony.

- **What about with other plugins, such as High Elevated Rail, High Monorail, CAN-AM, SAM, GLR, Pedmalls, FLUPs, Dual-Networking, and RAM?**

There are currently no pieces to cross High Elevated Rail or Monorail with RHW, as both networks will likely be made draggable in a future release. Additionally, there are no pieces made to cross CAN-AM or Pedmalls with RHW.

There is already a simple set of FLUPs available for the RHW, and this will be expanded upon in a future release.

RAM networks (primarily STR) already have the ability to cross with RHW, as with SAM.

Dual-Networking pieces, primarily those involving GLR (TIA, TIR, TOR, and TOS) have pieces that can be used for crossing RHW with these networks. However, there are currently no Dual-Networking Crossover Pieces for Elevated Rail over Road or Rail under Road.

- **What about frontage roads, or collector-express setups?**

These are specialised setups, of which some are already possible (see the forums on Simtropolis and SC4Devotion for examples). More research needs to be done in this front, but there is a chance that the number of possible setups is too large to handle properly.

- **I've never been able to properly cross HSR or BTM over RHW in the past. Is this fixed?**

Yes.

- **General Development and Third-Party Modding**
- **What's in the new version?**

Read the changelog. It's all there. If it's not there, then it's probably a surprise feature.

- **When's the next version coming out and what will it have?**

As per **NAM Team Policy**, we don't give out release dates, for the simple reason that there may be something unforeseen, development or otherwise, that may keep us from releasing things if there were an established date.

Plus, we really don't know, and who doesn't like **surprises**? ;)

If you want to see what's being developed, you can check in on either Simtropolis or SC4Devotion.

By the way, we did give out a release date for NAM 31: March 1st, 2013.

- **I have a request, idea, or something to contribute for RHW...**

Then suggest it, and it will be evaluated by other NAM Team Members. Be sure to check that it isn't something that can't be done or already been done.

However, if you think you really want to contribute new puzzle pieces to the NAM, you can check various **tutorials** about how to make things work. On **SC4Devotion**, there are various tutorials available regarding the creation of transit items:

- [SC4Paths \(by Blue Lightning\)](#)
- [Transit Texture Tutorial \(by jplumbey\)](#)
- [Making Models for Transit Networks – Some General Specifications \(by Tarkus\)](#)
- [RUL2 – A Guide To Texture Overriding \(by jplumbley\)](#)
- [How to create Puzzle Pieces \(by MandelSoft\)](#)
- [How to create smooth curved transit textures with the GIMP \(by Memo\)](#)

Related tutorials that are not in the main scope of the NAM, but still useful for third party modifications (like transit-enabled stations and T21 network props):

- [TE Lots, Transit Switches and You \(by Mott\)](#)
- [Transit Switch Entry Costs and Station Capacity \(by Z\)](#)
- [How to Create T21s \(by Swamper77\)](#)
- [How to Create T21s \(by Xyloxadoria\)](#)

- **I think I found a bug...**

Then post it on either **Simtropolis** or **SC4Devotion**. Chances are, there may be something that slipped out our hands from development, and if so, it should be fixed within a reasonable timeframe and be usually available for download. Be sure to check that it isn't an intentional feature. This includes, but not limited to, the following:

- Flashing red arrowheads on the RHW-3 and RHW-6S (Distilled Intersection Paths)
- Zigzagging traffic on wider RHWs (Crossover Paths)
- Traffic travelling underground along the city border (Pathing mechanic of the Neighbour Connections)
- Mismatched colouring of the Regional Transportation View (RHW RTV Mod, though misuse can lead to undesirable results)

If enough bugs have been found, or if it's a **RUL-related bug**, then it will instead be downloadable in a corresponding **Hotfix**.

The only time a bug won't be quickly fixed is during development of a newer version of the NAM, at which point, it will instead be fixed in the next version.

- **I'm developing something for the RHW and I need to know the IIDs for certain tiles. Where can I find them?**

For T21 or textural mods, the IIDs for the RHW can be found by searching through the Reader, or <>.

- **I'm developing lots or texture variations for RHW, and I need some Lot Editor textures and paths or some sample textures to refer to. Where can I find them?**

The RHW comes with a set of Lot Textures that can be used for third-party lots. The contents can be found in a file called **RealHighwayMod_LotSupport**.

If you wish to make different textures and need a reference, the RHW also comes with a set of sample textures that can be edited in an image editor, such as **Photoshop** or **GIMP**. These textures are found in a folder called **Sample Textures**.

- **Miscellaneous Questions**

- **Is this all necessary for a game that's been around for ages??**

Yes, it most certainly is. It's one of those things that keep this game alive and interesting, despite the fact that this game is over 10 years old.

- **OMG, YOU GAVE OUT A RELEASE DATE??!**

Remember what we said about surprises? We gave out a release date for the first time in NAM history. How's that for a surprise? We figured that **March 1st** was a fitting date to release NAM 31. Did you not see the Easter eggs? "**0x57313113**" (Project **57**, NAM **31**, and **3/1/13**) and "**fifty-seven million three hundred thirteen thousand one hundred thirteen**". ;)

It doesn't mean we'll do this all the time, though.

- **Credits**
- **Sources for Documentation**
 - Project Symphony Development and Support Thread
 - RHW Development and Support Thread
 - RHW FAQ
 - RHW Interchange Guide
 - RHW Readme
 - RHW Regional Transportation View Development Thread
 - RHW Seminar Log (Building Real Highway LIKE A BOSS)
 - RHW Seminar Log (The Future of RHW)
 - RHW Seminar Log (The Real Highway Mod, the Cosmetic Pieces and You)
 - SC4D Wiki
- **Current Developers**
 - **Andreas** (Packaging/Readme: 2007-2013, Version 1.3-present)
 - **Blue Lightning** (Development/Models: 2009-2013, Version 4.0-Present)
 - **deathtopumpkins** (Development/Textures, Testing: 2009-2013, Version 4.0-Present)
 - **GDO29Anagram/Ganaram Inukshuk** (Development/Textures, Documentation, Testing: 2011-2013, Version 5.0-Present)
 - **jdenm8** (Development/Textures/LHD Support: 2011-2013, Version 5.0-Present)
 - **jondor** (Development/Models/Textures: 2010-2013, Version 5.0-Present)
 - **MandelSoft** (Development/Textures, Documentation: 2010-2013, Version 4.0-Present)
 - **Memo** (Development/Models, ???)
 - **riiga** (Development: 2010-2013, Version 5.0-Present)

- **Ryan B.** (Props/Textures: 2005-2013, Version 1.2-Present)
 - **Shadow Assassin** (Development/Textures: 2007-2013, Version 1.3a-Present)
 - **Swordmaster**(???)
 - **Tarkus**(Lead Development/Textures, Documentation: 2006-2013, Version 1.3-Present)
 - **toja** (Models: 2010-2013, Version 4.0-Present)
 - **warrior** (Technical Assistance, 2007-2013, Version 2.0-Present)
-
- **Testing**
 - **Douzenrouge**
 - **Br22ian**
 - **Samerton**
 - **CasperVG**
-
- **Former Development Team Members & Contributors**
 - **Alidonkey**(Development/Textures: 2007-2008, Version 2.0)
 - **ardecila** (Development/Textures: 2008-2009, Version 3.0)
 - **blahdy** (Models: 2007-2008)
 - **choco** (Bridges: 2009-2010, Version 4.0)
 - **Chrisim** (FLUPs Integration: 2010, Version 4.0-4.1)
 - **dedgren** (Textures: 2009, Version 3.0-4.0)
 - **ebina** (LHD Pathing: 2008-2010, Version 3.0-4.1)
 - **Filasimo** (Packaging: 2007, Version 2.0)
 - **jmv1** (Development: 2009, Version 4.0)
 - **jplumbley** (Technical Assistance, 2007-2009, Version 2.0-3.0)
 - **mjig_dudy** (Textures: 2007)
 - **mtg** (Development: 2010, Version 4.0-5.0)

- **nooneatall** (Textures: 2005, Version 1.2)
 - **qurlix** (Development: 2005-2007, Version 1.2)
 - **rickmastfan67** (Textures: 2007-2008, Version 2.0)
 - **smoncrie** (Development: 2008-2009, Version 3.0-4.0)
 - **swamp_ig** (Development: 2010-2011, Version 4.1-5.0)
 - **Swamper77** (Development/Models: 2007-2009, Version 2.0-4.0)
 - **videosean** (Textures: 2008, Version 3.0)
 - **Zeddic** (Textures/Packaging: 2005, Version 1.2)
-
- **Original ANT Plugin Reintegration**
 - **the7trumpets**
 - **Tropod**