

# HD Roads for EasyRoads3D Pro

## Intro

This pack is an EasyRoads3D Pro Addon with HD content and ready-to-use road type presets and road related side objects. It was made in co-op between EasyRoads3D and NatureManufacture (link) teams.

All assets are PBR and support Unity 2017, 2018, HD & LW SRP. All roads connect in a seamless and natural way to each other out of the box, with options to change connections manually – by default it's random from predefined decal types. Connections between roads are natural and made from real world existing road connections. Texture maps are packed to save GPU and memory usage. Crossroads are made with minimal texture usage, in effect the whole road system doesn't take a big amount of memory from your app. With this pack your roads will get AAA look.

To take full advantage of the package contents make sure EasyRoads3D Pro is at least updated to v3.1.

## Getting Started

This package includes road types and side objects. Please follow the below steps to add these road types and side objects to your project so they become available in all your scenes.

1. Open a scene with a road network and select the road network
2. General Settings > Road Types > Import Road Types, this opens the "Import Road Types" window
3. Assets/NatureManufacture Assets/HD Roads Presets, drag this asset in the "Import Road Types" window
4. All road types will be listed. Select All and press the "Import" button at the bottom
5. Repeat the same steps for side objects: Side Object Manager > Import Side Objects

If this is a new project then you could also open the demo scene

/Assets/NatureManufacture Assets/Demo/Demo

and select and deselect the road network object in the hierarchy. This will add all data to your project road types and side objects data.

## Materials & Shaders

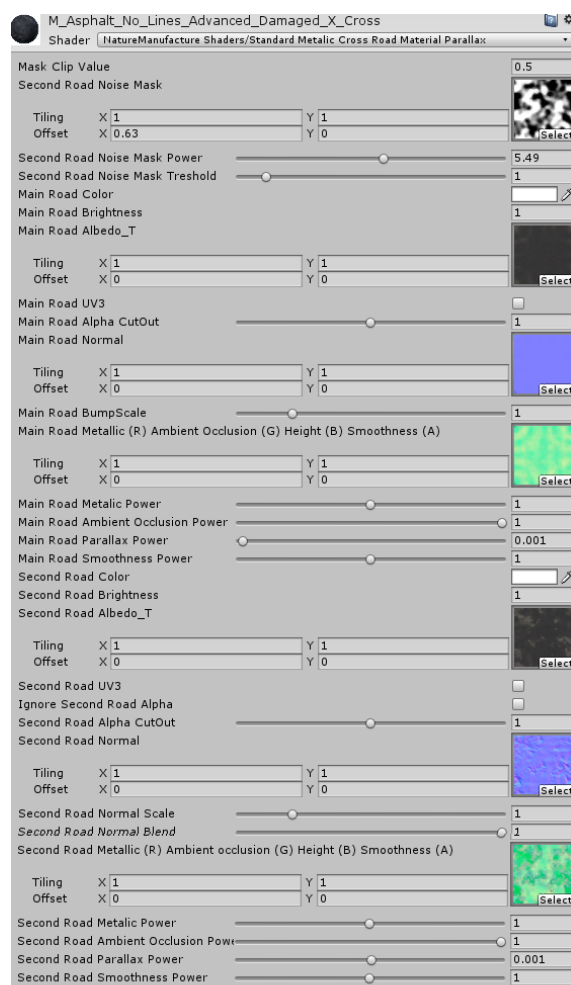
Shaders and material could mix up to 3 layers. We use it to create crossing without additional materials or simply to mix 2 different road materials and create third one from it.

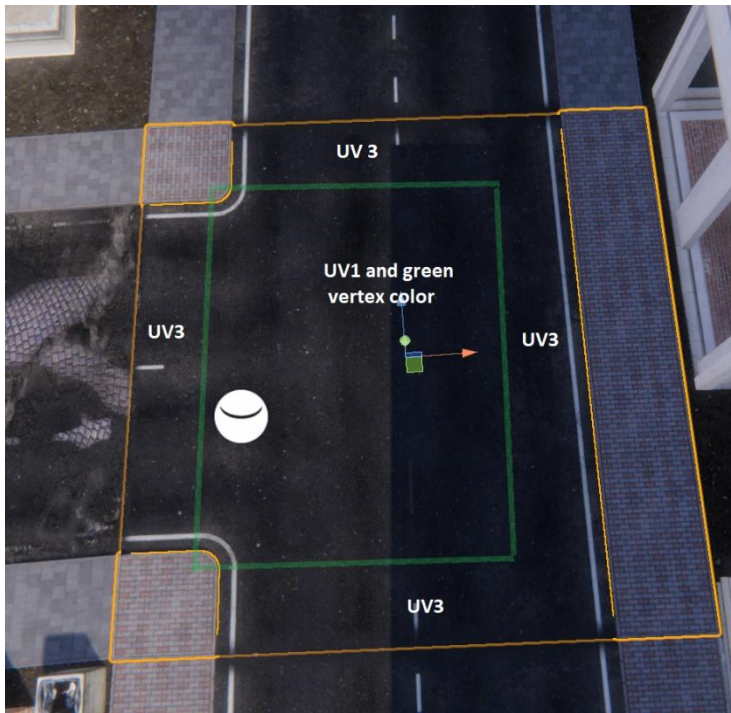
We used compressed textures for additional maps, which is fully compatible with Unity standard shaders and HD SRP rendering too. Compressed means we pack metallic, ambient occlusion, height and smoothness into 1 texture to reduce GPU and memory usage.

Second Road noise mask used to blend 2 road types. It contains power and threshold sliders which will help to adjust intensity and layers propagation without changes in texture.

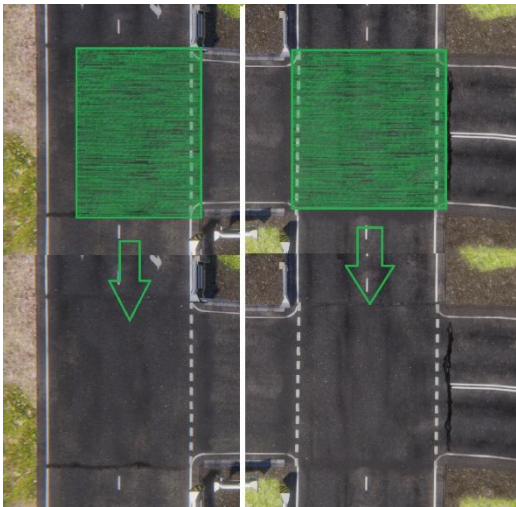
Each layer contains „ignore road alpha” – we use it to set proper cutout over the road materials during mixing as different road materials contain different alpha. You are able to choose which should be used or ignored. Good example is dirty road and asphalt mix where we ignore dirt road cutout as dirty is setup as dust overlay so it should not affect asphalt alpha at all. Same situation happens in crossings.

Each layer could use UV3 or UV1. We use UV3 for crosses to set proper UV direction in upcoming roads.





Cross layer work on „G” vertex color. We paint main crossroad area by „G” color and rest is black. This gives nice blend between upcoming roads and crossing area. This also allow us to use 1 material for T and X crossing as „G” vertex color on mesh could mask or show up specific road layers. That’s why left side of left image below is still straight road instead of cross texture on material. This 2 crosses have same material but they generate different result.



### Road Types

The package includes 25 new road types based on 4 different road surfaces (asphalt, cobbles, concrete and dirt) and different line markings.

### Start / End Decals

Each road type includes a selection of Start / End Decals which will be auto inserted at the start and end of the road. This will add cracks or blended transitions between different roads types. A decal will be selected randomly. These decals can be changed manually in the main road settings of the selected road. Decals can be given higher / lower priority in General Settings > Road Types > Start / End Decals.

EasyRoads3D v3.1 is required for this feature.

## Connection Prefabs

The package includes a wide range of ready-to-use intersections based on the 4 road surfaces (asphalt, cobbles, concrete and dirt) and different intersection types ( X Crossing, T Crossing, Y crossing, roundabouts) with and without pavement.

naming convention:

Asphalt\_Lines\_Damaged\_ER\_OX\_Sidewalks

Asphalt:	The base texture (asphalt, cobbles, concrete or dirt)
Asphalt_Lines:	The base texture includes line markings ( otherwise it is named _NoLines_)
Asphalt_Lines_Damaged:	The secondary texture (if used)
Asphalt_Lines_Damaged_ER:	EasyRoads3D prefab reference
Asphalt_Lines_Damaged_ER_OX:	The crossing type

Crossing types:

X	X Crossing
T	T Crossing
XT	Can be used as both x and T Crossing
Y	Y Crossing
OX	Roundabout four connections
OY	Roundabout three connections

Asphalt\_Lines\_Damaged\_ER\_OX\_Sidewalks      Sidewalk included (two types)

Optionally prefabs that will not be used in your project can be deleted or, which is recommended, they can be moved to the respective folder in /Easyroads3D/Unused prefabs/. This will clean up the Connections tab in the Inspector.

Recommended workflow for connections prefabs in Scene View:

In EasyRoads3D connection prefabs can be auto inserted by snapping start / end markers to other road sections. Becasue pavements in this package are currently added as side objects the system will not use this information when matching intersection prefabs with the involved roads. There for it is recommended to either place intersection prefabs directly in the scene by selecting them from the connections tab (3rd tab from the left in the Inspector) and Shift + Click in the scene at the intersection position and attach existing roads to them or pull out new roads from the green connection handles roads. Or select the marker where an intersection should be added or inserted and select the desired connection prefab from the same connections tab in the Inspector.

## Side Objects

The package includes various side objects such as crack and damaged roads decals and line markings. Also included are optional curbs and dust decals near the edges of the roads.

Specific side objects like "Road Fix 1" and "Road Fix2" (road decals along the track) and line marking decals are auto activated for some road types, like for road type NM\_Aspphalt\_Dotted, and will be generated automatically. This can be customized for each road type in General Settings > Road Types > Active Side Objects.

## Start / End Offsets

Most have default start / end offsets applied. If desired these default offsets can be adjusted in the Side Object Manager.

## Parking

For perfect rectangular non distorted parking lots it is recommended to activate this side object on marker sections that use the Straight XYZ Controller Type.

## Sidewalks

Sidewalks are currently part of the package as side objects because the connection prefabs in this package are custom prefabs with sidewalks no part of the road.

Currently two sidewalk types are included with versions for both sides of the road.

Path Left  
Path Left v2  
Path Right  
PathRight v2

Both versions also include an "Ended" version. This will close the gap.

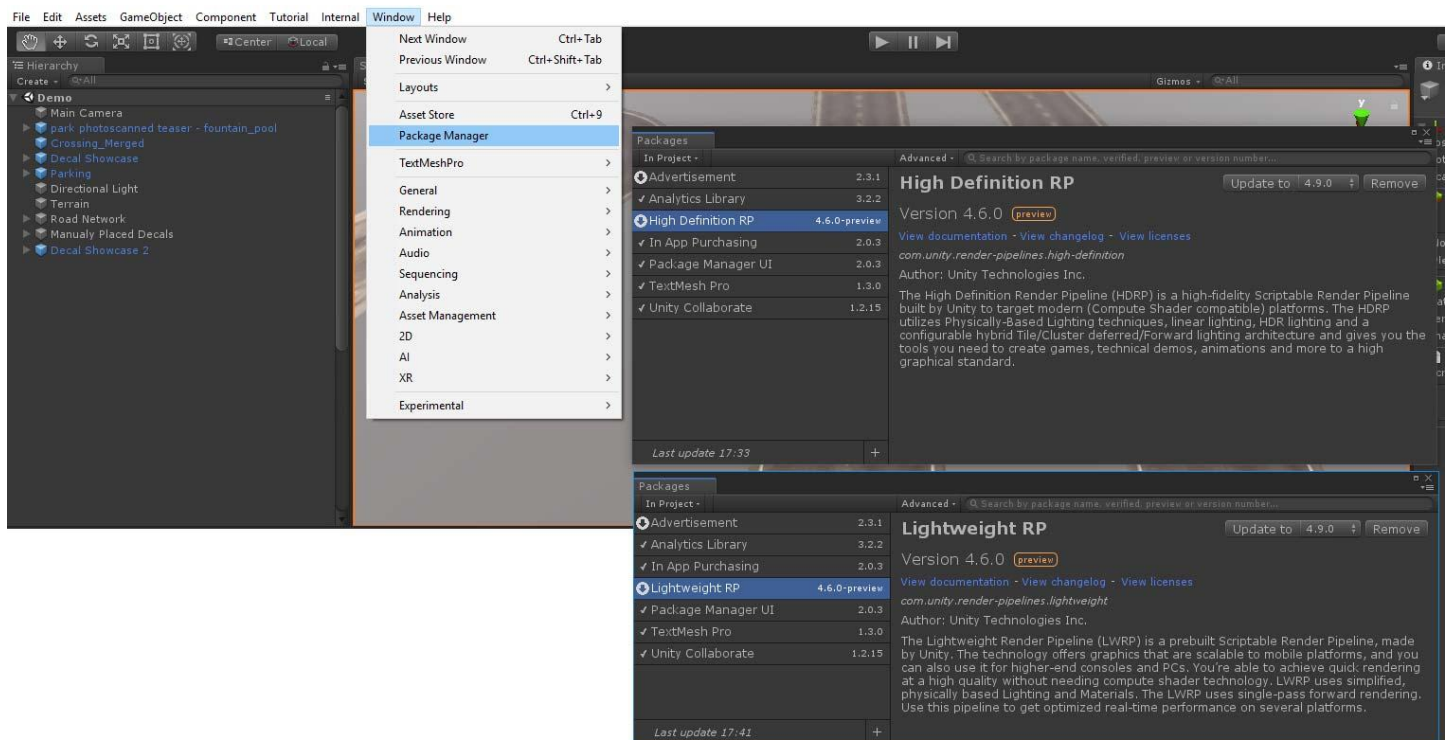
## HD & LW SRP

The package includes separate HD and LW SRP demo packages in

/Assets/NatureManufacture Assets/SRP Support/

In order for this to work make sure to first import the full package and afterwards the required SRP package. The SRP version imported in your project can be found and updated in:

Window > Package Manager



**NOTE:** for HD SRP v6.9+ please first remove the following two shaders before importing the SRP package:

/Assets/NatureManufacture/HD Roads/shaders/Standard\_Metallic\_Road\_Shader\_Parallax

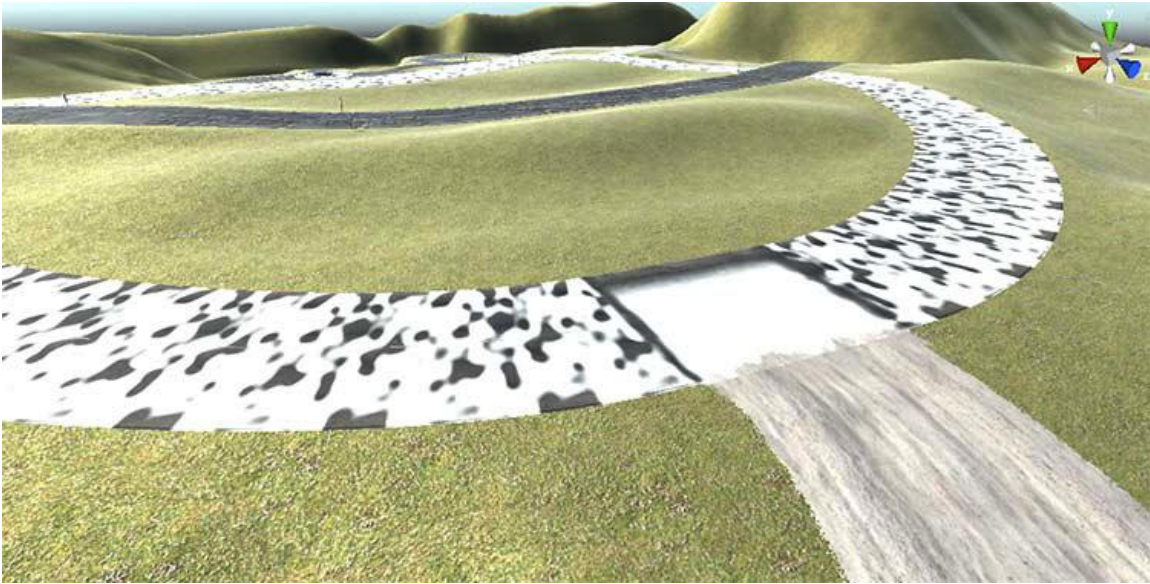
/Assets/NatureManufacture/HD Roads/shaders/Standard\_Metallic\_Cross\_Road\_Shader\_Parallax

## Troubleshooting

When using Gamma for Color Space in

Edit > Player Settings > Other Settings > Rendering

Materials may look like in the image below. This can be fixed by reducing "Main Road Detail Albedo Power" to below 1.



DetailMask (A)

Tiling

X 1

Y 1

Offset

X 0

Y 0

Select

DetailAlbedoMap

Tiling

X 1

Y 1

Offset

X 0

Y 0

Select

Main Road Detail Albedo Power

1.806

Second Road Parallax Power

0

Second Road Detail Albedo Power

0

DetailNormalMap

Tiling

X 1

Y 1

Offset

X 0

Y 0

Select

Contact:

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