Exurbs/Bedroom Communities in the Solarpunk Transition

With some notable exceptions, current solarpunk media seems to focus mostly on either cities or little cottagecore homesteads. But there are a lot of regions, especially in the United States, which don't look like either of these. Some of these places will be harder to transition into a solarpunk future than others.

What are Exurbs?

Exurbs are rural/formerly-rural areas where people live but don't work. They're characterized by low density development (usually around 1-acre minimum building lots) and a lack of businesses or industry (often due to intentional zoning choices).

To quote an excellent write-up on the history of American suburbia and exurbia by Kate Wagner of Mcmansion Hell, “Exurbia is a low-density community built on previous farmland that requires a car trip to complete the most basic tasks, such as grocery shopping. It is a bedroom community - the working population commutes (by car) to work, and the young population goes to school.”

Exurbs are a direct product of the invention and popularization of the automobile. They're not viable without it. Their population is currently spread too thin and too widely to make effective use of public transit.

Rural Areas and the Car Transition

A hundred-some years ago these regions were characterized by denser villages, with wide stretches of forests and farmland in between. Even the farmhouses tended to be a bit clumped up with their neighbors where possible. When people built towns and villages they had a specific reason for choosing that location - perhaps a stretch of river suitable for mills, or close to exploitable natural resources. People lived near their work.

They set up this way because it was practical for people who walked or relied on horse carts to get around day-to-day. People still had personal vehicles (mostly wagons but this included some early automobiles), especially the farmers and others who lived outside of town, but they generally only used them for local travel. When they needed to travel longer distances, they would drive/ride/walk to the nearest big town and take a steam train (or boat, etc) for the majority of their trip. Similarly, cargo was transported by train or boat for the majority of its journey.

Early automobiles were remarkably unreliable and driving one across multiple states was generally more of a recreational challenge than something you'd do routinely. Roads were commensurately more basic, suitable for local travel and even then mostly for low speeds and steel-rimmed wagon wheels. Paved roads were generally something you'd only find in a town.

As automobile technology improved, they became both cheaper and more reliable/useful. More people bought them and advocated for better roads to drive them on (pushed by the growing auto industry). Previous suburbs had followed rail lines and streetcars but now new housing developments were built with the expectation that homeowners would drive to and from them in their cars instead. Early auto suburbs were still built somewhat near major centers but once the interstate system was established, it became feasible to build much further out where land was cheaper and more private

space could be had. It became much more profitable to subdivide farm- or logging land for housing developments than to maintain the big contiguous blocks for their current use. And gradually, generation-by-generation, rural communities were subsumed into a sprawling collection of houses and developments until the little villages were only distinguishable from their surroundings by the age and slighter-closer layout of their buildings.

It's important to understand that this new development was done entirely around the automobile. There was no alternative method for travel built in to whatever community planning was done. The Streetcar Conspiracy is generally remembered as the auto industry's biggest success in promoting their products against the public good, but the interstate-era development boom that entrenched their products as a necessity might just surpass it. Modern zoning laws establish requirements on minimum-buildable lot size and generally exclusively specify residential use with any commercial activity restricted to specific zones, (usually miles away in another town where they've built dozens of box stores and strip malls). This guarantees that an exurban community is as wide-spread and far from necessities as possible, and makes it hard to plan out and introduce any alternative transit system.

Exurban communities may perceive themselves as being rural and resilient, but they sit at the end of long, fragile supply chains. Just as with suburbs, the vast majority of food, durable goods, and other necessities are produced elsewhere and imported by truck. The only real difference is in the additional travel distance from store to home.

How and Why Would Exurbs Change?

If any of the above strikes you as being a bit incompatible with solarpunk values, you're not alone. Including these regions in a solarpunk setting would likely take more than just swapping in electric cars. A more solarpunk version of these communities would probably look similar to how they did in the past - denser, walkable towns and villages linked by rail and other public transit, with much more sparsely-settled land in between, including farms, homesteads, and occasional commuter holdouts. We'll get into these changes in greater detail in the next sections.

This kind of mass resettlement is obviously a nonstarter for the people who've moved to exurbs specifically to live someplace where they can't see their neighbors. These houses are impractically located but they're somebody's home, and there's a lot of identity tied up in living in a 'rural' place, even if the rest of the lifestyle is missing. Its likely impossible to convince people to give up home (and their sizable investment in land and construction) - (un)fortunately it looks like the impending climate disaster and other societal crumbles may do that for us.

The exurb format is basically inherently impractical, dependent on long supply chains and especially on a subsidized auto industry and cheap, subsidized fuel. Any disruption to these systems can cause outsized problems for exurban residents who drive further, have fewer alternative options (for transportation, work, supplies etc), and who depend on longer logistics lines than other communities. Perhaps more significantly, in times of shortages and disruption, these towns may lack the population and municipal coordination necessary to advocate for themselves over larger neighboring communities. If resources are limited, it's likely going to be easier to justify providing aid to a city of a hundred thousand than to a town of two thousand. This already happens in the event of natural disasters, and it may prove especially true in the sort of slow decline and less-visible hardship these towns may face, without showy, media-worthy evidence to call attention to their situation.

Almost every aspect of modern life depends on incredibly complex web of supply lines - it's not enough to just note that manufacturing starts with resources which are extracted from remote locations (whether that's mines, oil wells, or timber forests) and are transported for refinement, because the mines etc and transportation industries also rely on heavy machinery, replacement parts, fuel and lubricants, electricity, from the existing network of extraction, transportation, and manufacturing. The resources are refined in various stages at various facilities around the world (most of which are themselves incredibly complex and dependent on external inputs), and are then transported and used to produce parts which are transported, assembled into a final object, transported, sold, and transported home. Just from COVID and recent tariffs we've gotten some glimpses to just how thoroughly disruptions in one area can break things all over, to say nothing of components like complex electronic chips which are only produced in one or two geographic regions. Climate Change and the wars, pandemics, and other disasters which flow from it can all cause cascading issues and outright collapse. Even when items are produced, will the transportation fleet be up to moving them? Without fuel and replacement parts and new truck production to replace losses, our logistics network will weaken or break. Similarly, the transportation infrastructure, roads and bridges is already experiencing infrastructure debt from decades of austerity/neglect, and is also dependent on steel, concrete, asphalt, and other materials with long supply chains. When it becomes harder to transport goods, and goods are scarce, will corporations bother shipping them to their most remote retail locations? Will states transport aid past larger cities with dense, easier-to-reach populations in need in order to help scattered populations on the outskirts?

Life in exurbs could become much more difficult in these circumstances. Food, fuel, heating oil, and durable goods may become expensive or simply hard to find at any price. Construction materials necessary to continue development or to upkeep existing buildings may become scarce. Roads may become even more expensive to maintain and vehicles damaged by accidents or poor road conditions may be much more expensive or impossible to repair for lack of parts. As the existing fleet dwindles, replacement vehicles will climb in price.

There will always be some who value home over all else and will change whatever they have to to make it work. They may represent homesteaders in a future solarpunk setting. But others might move closer to the rest of society. This might not start as a permanent commitment, they might stay with friends or relatives near work, set up a camper in a driveway, or if things are desperate enough, follow long human tradition and build slums and encampments near whatever looks like opportunity. This is a messy, ugly stage in a transition, but it's not a terribly unlikely one. The scope and scale of this cascading series of crisis and the population shifts which follow from them will depend mostly on your optimism as a writer.

I will note that the following changes are likely going to be easier to justify if your story is set during or after societal crumbles from climate change, pandemics, war, etc than if it's a bright green future utopia. If resources are plentiful or even post-scarcity and have been the whole time, its hard to see any reason why rural communities would give up their cars, let alone their sprawling, ever-spreading development.

Roads

When talking about exurbs, roads and personal vehicles are the biggest factor in their viability. When everything you need is between 30 minutes and two hours away by car, any loss of either can become a serious issue. Even for towns small enough that they don't maintain their own school, or full-time police or fire departments, the maintenance of the roads is a serious (if overwhelming) responsibility - they're helped further by the state and federal governments maintaining their own

sets of high-speed roads.

Driving isn't a convenience in these regions, it's essentially a necessity, and it's thoroughly entrenched. Elderly people are often granted special leeway to allow them to drive even after their vision or reflexes become unsafe, because once they lose the privilege, they're essentially trapped in their homes and reliant on whoever they can find to drive and shop for them. Even in lower-income exurbs, it's very common for a household to have at least one car per driving-age person, if only so there's a backup option for when one is in the shop. People watch gas prices carefully because a few dollars' difference can seriously impact their ability to live their lives.

Both automobiles and roads are products of long, incredibly complex supply chains. A single automobile is manufactured in multiple countries, from parts made in many more, from resources extracted even further afield. Similarly, roads and bridges require not just asphalt, concrete, steel, and various grades of fill, (all of which require extraction, specialized production, and transportation) but fleets of specialized vehicles and machinery, all of which must be produced and supplied with parts and fuel.

In my region, at least, roads, bridges, etc require constant maintenance to remain anywhere approaching driveable, especially at posted speeds. Winter breaks them with frost heaves and pot holes, spring turns their footings to muddy slop or washes them away in floods. The maintenance is constant and expensive and despite that work decades of infrastructure debt have accumulated. Many of our bridges and highway infrastructure are already past their design lifetimes in many parts of the US (I'm not qualified to speak to other areas).

None of this is insurmountable, even in hard times - but it seems likely that bigger communities will have more resources to spend on maintenance and procurement of scarce supplies and that small, decentralized towns which have spent decades prioritizing small government and low taxes will struggle to compete.

Rebuilding Different

Looking towards the optimistic, recovering solarpunk world on the other side of these bad times - we should consider what rebuilding looks like. If populations in your setting have shifted in ways that make public transit more viable, and if your society has resource limitations, as most societies do, and they're prioritizing big infrastructure stuff and public transit like new train lines, it's possible that a lot of roads might remain in serious disrepair due to low priority. Essentially they can throw good money after bad forever trying to maintain the current system of roads and cars (which will entail a lot of rebuilding and new work) or they can scale it down and lower their expectations and put their prioritization on other stuff. Low Tech Magazine put together an excellent article on how to downsize a transportation network, which should fit well into a more modern post-collapse-era.

Even if your setting *doesn't* feature a period of societal crumbles it's possible that the road network will decline. To put it bluntly, a society where most people take trains, ropeways, bus, ferry, or other public transit, ride bikes, and live in denser communities might find themselves wondering why they need to maintain an extensive and costly autoroad network.

Either way, the end result may be a road network that is mostly used only for local travel, and is primarily traversed by low-speed vehicles which are suitable for the new conditions. In this context existing autoroads may be breaking up and returning to dirt, becoming narrow or overgrown, and be maintained mostly by the people who use them rather than government organizations. If large areas have depopulated, its even possible that the remaining population will blaze new trails which meet

their current needs and fit their more offroad-capable vehicles through once-occupied properties. Gradually this new network of old roads and new trails may look more like a complex web of modern-day snowmobile trails or class-six roads than the highly-regulated highways maintained today. Its also possible that some roads or even entire swaths of the road network may become seasonal again.

Community Layout

As we said above, the general layout of rural communities before cars had some similarities with the solarpunk ideal. Communities tended towards walkable towns and villages which were built in practical locations and featured a basically zoning-free mix of residences and businesses. There was an emphasis on public transit (mostly steam and then diesel trains, though some self-propelled railcars, busses, and railbusses and appeared in time, as well as boats, ferries, and ships as appropriate).

Historically, these places had problems and a lot of the overlap with solarpunk is accidental at best, but a lot old practices are still more ecological than our present day ones, and layout is part of that. So what would we add?

Modern public transit has come a long way since the last trains stopped at many of these towns. This could include high speed rail corridors where it's possible to build new HSR tracks, and reliable electric trains running on existing tracks (or rebuilt tracks on existing right-of-ways) connecting larger towns. Trains have tighter requirements on grade/slope and the sharpness of curves than automobiles so existing/historic tracks are probably the easiest starting point as the survey work and much of the construction is already done.

For smaller towns with tracks (perhaps on branch or spur lines) but with less ridership/cargo, electric trams, self propelled railcars, or railbuses may make more sense. These vehicles are smaller and cheaper to operate so switching to them could enable routine, reliable service on an otherwise quiet track.

For service to smaller towns and villages, electric buses, or even ropeways might make sense.

And of course electric boats, even airships in the right circumstances.

If your setting includes the kind of climate-crisis-derived shortages and migration discussed above, then you may also want to consider how this influx of people has reshaped these towns and villages. Perhaps the place is especially dense with small houses and trailers on confusing lots, as existing yards were subdivided into multiple new residences which have gradually formalized as a permanent new additions to the town. Perhaps modern apartment buildings are under construction to improve some of the residents' housing situations. New rail tracks may have been laid, or former tracks returned to service (which can be a contentious process when old tracks have become much-loved bike paths).

The important thing is to set up good, stable public transit like trains connecting the places where people gather. (And busses or even ropeways for small villages where terrain or population makes trains impractical). From there, smaller populations mean the roads probably get a bit worse, go an extra year or two before being repaved. And so on.

You'll still see plenty of personal vehicles out there, possibly more electric ones . Woodgas conversion vehicles might also make sense for something you drive into town on special trips.

Travel might look like stoking up a woodgas pickup, riding over crumbling roads to the small town nearby, and getting on a bullet train to the nearby city. It wouldn't be much different from how my grandparents did things.

Outside of town, things might look even more different. An emphasis on local agriculture may bring back some farms, but there's also an excellent opportunity to let wild habitats regrow after decades of endless clearcutting and development.

Its important to consider what happens to the houses and developments spattered across the land between those villages. Exurbs are characterized by the low-density spread of residences, every road with a house a quarter mile from its nearest neighbor, now miles from the new hubs of public transit. Its likely many of these were abandoned long ago, and may be in various states of decline.

In some cases, old buildings could be put back into use. Perhaps they’re nearby something the rebuilding society needs. Maybe one development will make for a good farming community, and another the barracks of a logging camp. Maybe one near a river can support trade or fishing. But there will be others that are simply not very useful. They were practical enough for semi-suburban life when gas was cheap, cars were plentiful, and roads were maintained. But in a world where most people have other priorities, live in closer communities, use public transportation, and aren’t interested in rebuilding a car-centric world, these houses don’t make sense.

For these houses, and for those which are located in unsafe locations (such as on a floodplain, above an unstable/eroding cliff, or in a likely wildfire area) deconstruction followed by rewilding might be a very practical answer to both the long term threat posed by these structures and to the recovering society's own building material needs. The linked page covers most of the specifics but there's really a range of options here. This could be a sweeping, formalized effort to remove dangerous buildings and produce new conserved wild parks while feeding usable materials and items into a library economy, it could essentially be unmanaged looting committed by nearby communities trying to overcome scarcity in supplies, or anything in between.

As for the farms, homesteads, and other holdouts, I'd suggest looking for aspects of solarpunk which are easy to arrive at independently because they work, especially in times of scarcity. It takes all kinds to make a world, but there are a lot of solarpunk practices which make sense through a lens of rugged individualism and would be an easy starting point for someone who isn't ideologically aligned with the rest of the movement. Solar panels and water wheels allow you to live comfortably without relying on a company or local electric co-op for your power, even when storms would have caused outages. Solar hot water heaters or solar cookers let you heat water or prepare food with no fuel. Solarpunk farming practices such as replenishing soil with biochar and radial chipped wood, building resilient living fences, operating passive greenhouses, using bait trees in orchards, can all make sense when external inputs like chemical fertilizers, pesticides, and fuel are hard to come by. It's possible that people in these regions will still be comparatively conservative in the solarpunk future, but would look quite progressive or forward-thinking to a modern audience because these practices have been enabled and essentially been made the default the way that unsustainable, consumerist ones are today.

Vehicles

Our page on personal vehicles in solarpunk settings offers some suggestions on how our usage of vehicles might change in a solarpunk future, along with a number of examples of what they might

look like, both in developed and rural areas.

Our page on seasonal roads offers some recommendations on the kinds of modifications people might make to their personal vehicles if the scope and scale of the road network has been reduced enough that areas with cold, snowy winters are no longer working (and causing ecological damage) to keep them clear to bare pavement all winter.

To add to this, its worth noting that the big 18-wheeler trucks which currently cover a large portion of our overland cargo transportation needs generally require better roads than regular passenger traffic. Transporting large amounts of cargo to or from places which aren't served by train lines or ports is a challenge which could be met with airships or even temporary, lightweight narrow gauge railways, which saw use before the availability of combustion engines and were generally laid for the duration of a specific task and moved once the project was finished. The narrow gauge would likely limit the speed and weight of any uses. Road construction and maintenance is certainly possible in these circumstances, though it may be contentious within the setting, as are stranger options like overland trains which may make sense in some extremely limited use-cases.

You'll still see plenty of personal vehicles out there, possibly more electric ones as it's easier to make your own electricity than it is to make your own gasoline or diesel. Woodgas conversion vegicles might also make sense for something you drive into town on special trips.

Travel might look like stoking up a woodgas pickup, riding over crumbling roads to the small town nearby, and getting on a bullet train to the nearby city. It wouldn't be much different from how my grandparents did things.