



My Transport Design

By Witchhazel Wildwood

Transport Design Introduction

This design aims to present a more sustainable plan for my personal transport use. I have taken a good look at how I currently move around to my regular locations, what the issues and challenges are and have come up with an improved design. I am pleased to say that this design is not only more sustainable in transport terms, but also has extra yield in improving my well-being and food shopping habits as well.

Background

Here are some of the reasons I decided to do this design:

A few years ago, I was travelling between England and Wales. This is a regular journey for me and there are several ways I can do it. On this occasion I was driving alongside the river severn, which is my favourite scenic route. I notice that this route passes through several villages and houses are very near the road. I began thinking about the impact my journey was having on the people living in these villages. I thought "These people have to put up with my pollution, noise and the safety issues, to enable me to make this journey. That can't be right". I immediately set to thinking how it would feel so much better to travel horse-drawn.

I entertained this reverie for the rest of the journey, thinking how I would have to find out the best remaining cart-tracks and routes, and how it would mean much better planning of journeys. I could immediately see some serious problems – having to find somewhere for the horse to stay when I went anywhere, poor weather, tiredness etc. The most serious block felt like the safety issues – many roads are not safe to travel on with a horse and especially a cart or wagon. I would be very visible and would feel unsafe camping alone on the verges at night. It feels like a solution that might work in the future when the roads become quieter (I continue to hold this vision!) and if more people are travelling this way there would be better infrastructure and it would hopefully become safer and easier to travel in a group. I have known people who have lived in horse-drawn wagons, and also travelled with hand-carts. An amazing but really tough life, especially in our modern world. I guess it depends on where you need to get to.

One of my dilemmas when moving from Oxford and focusing on arboriculture was that it meant leaving behind my cycling lifestyle (Oxford is a totally pro-cycling town) and BUYING a van to enable me to carry out my 'sustainable' woodland work! At the time I bought a mobile caravan and worked as a seasonal worker, travelling between jobs but staying put in between, and then summering in mid Wales. This worked very well for a few years, and I tried to avoid any unnecessary mileage in my schedule.

Having settled on the Gower, my travel carbon footprint seems to have gone up rather than down and I have not found a good solution to my short to medium journeys, which at present I usually carry out in my van because of moving work resources around. This has prompted me to take some time to do this design and try and make some improvements to my transport methods.

Witchhazel Wildwood June 2011

How this design meets the Assessment Criteria

<i>Criteria</i>	<i>How I meet it</i>	<i>Where in the design</i>	<i>Section No</i>
Demonstrating design skills	Used design framework Used tools & techniques Used methods suited to situation Created coherent design Progression in learning Achieved fluency with tools and methods	Design Process Sheet Base Maps Analysis Survey Analysis Design Review Analysis	2 4 6, 7, 8A, 8B, 9A, 9B, 10A, 11 5 11 12, 13A, 13B 15 6, 7, 8A, 8B, 9A, 9B, 10A, 11
Applying permaculture to my life	I reviewed my transport methods and created an action plan for change	Client Interview Design Action Plan Implementation	3 12, 13A, 13B 14A 14B
Evaluation and costings	I evaluated the environmental costs of different forms of transport	Analysis	7

Transport Design Process

Survey

I used the 'client interview' tool to consider my thoughts on my current transport methods and looked at base maps of the areas I mainly travel to. I then made a chart of my current transport destinations, frequency and methods of transport

Analysis

I drew base maps of my transport zones and a sector map. I analysed possible transport methods in terms of key functions and elements, smart goals, impacts, outputs and inputs, permaculture principles and ethics and a PMI. I then listed my top three choices.

Design

I drew up new zone maps showing new transport methods for each zone, local shopping options and strategies for limiting factors.

Implementation

I drew up a 12 step action plan and recorded my first changes.

Maintenance

I will maintain the design by continuing to work through the action plan and evaluation my smart goals. This may also involve tweaking.

MyTransport Design

Survey

Client Interview (with myself)

Base Maps

My Transport Methods table

Transport Survey

Client interview

What are my current methods of transport?

On foot, bus, van, partner's car, train

How do I earn my living?

Project Coordinator for tree nursery (Coeden Fach CF), Woodland Management Business (Wildwood WW)

Hobbies and Interests?

Music, walking, kayaking, gardening

How long am I likely to stay in current situation?

I am not planning to move in short term. I am likely to move in longer term next 5 – 10 years. I am planning to stay in current occupations for next 5 years.

What works?

- Walking short distances.
- Bus to town during day for light shopping. (bus stop is good place to get opportunist lifts from neighbours too at 8 – 9 am)
- Using my wheelbarrow trailer for local jobs up to 1/2m.
- Getting train to Mum's when not too much to carry. (Station is 10m away- have to get bus there during day, or lift at night)
- Using van for holidays.
- Using van for heavy resources and longer trips.
- Lift sharing in my partner's car when going on journeys together (lower fuel consumption than my van).

What doesn't work?

Nursery work is busy and I have to travel about to different locations to do it, usually carrying resources. I often feel I don't have enough time to get the bus (hourly), which would also involve walking for additional mile from nursery site to office and back. (beautiful coast path though!)

Poor bus service locally – doesn't run after 7pm so can't use for evening meetings. Can't lift share to nursery as no-one else at CF lives near me. Have to get two buses to do food

shopping in Mumbles. We have 2 different bus providers and the tickets are not transferable. Oh how I would love to set up a sustainable local bus service here if I had time! Bus stops are 1/3m in either direction (one is down steep hill – not good for carrying shopping home)

Cycling – I do physical work regularly especially in winter and don't have energy to cycle far with tools. There are some big hills round here. The lanes are windy and narrow and there are frequent accidents. Cyclists sometimes get killed. There doesn't seem to be any local plan to create cycle lanes rurally, although we have some good cycle routes in Swansea. My bicycle doesn't have a shed so it is getting neglected and needs a service.

I feel I use the van too much especially for CF. I often have to travel between several locations in one day, eg buy resources, nursery site, office, meeting. I am the person who most often has to move resources around because most other people in the organisation don't drive. I try to share the driving workload with the other people who do have vehicles. Sometimes deliveries are direct to site but this is difficult due to our opening hours. When I am volunteering, it is cheaper for CF to pay me for travel in a vehicle (25p mile x 7 miles = £1.75) than to pay for my bus fare (£4 for same journey!). We do have a transport policy. Because others are being green ie no vehicle, I end up doing their 'fuel miles' moving the resources around.

Camping holidays – I love camping in the van. I have everything with me, it is comfortable and dry. I find just a tent hard work and a lot to carry. I used to go camping with just my bicycle but I just don't have the energy anymore and also find sleeping without a bed really uncomfortable.

What are my needs and wants?

Priorities –

- Ability to get shopping
- Ability to move between locations when working for CF
- Facility to take my tools to a woodland job
- Facility to get resources to and from CF tree nursery
- Ability to get to family quickly if needed

Additional things it's nice to have –

- Vehicle big enough to sleep in
- Ability to go to several locations on the way to my Mum's
- Easy travel

Unmet needs and wants

- Shared movement of resources (CF)
- Green fuel locally

What energy/fuel do I use?

I tried biodiesel in my last LDV van and it didn't work very well. Our local supplier has now closed. (They used to use re-cycled cooking oil). I could be using maybe 1/3 biodiesel if I could get it. Making own biodiesel is very time-consuming and requires a storage area and driving around to collect the oil. I haven't found a van that I can buy that would run on 100% (VW – too expensive! Landrover – not a van!) Risky to spend money on van and damage it - not a good use of resources either.

What is my vision and values?

Using van less, especially for CF – more sustainable transport. Would like to sort out shared transport policy at CF. Share journeys more. Have van available for holidays. Would like to cycle more. Using solar powered tricycle for medium journeys (up to 10m) would help with my energy and the many locations. I could carry a certain amount of resources. Would it be safe? Where would I store it? I would need a new solar panel. Could I go on a course (Lili?) to convert a tricycle to 12v power?

What would need to change for me to use my van less?

A way of sustainably moving resources around locally. A sharing of CF workload. Better public transport – more frequent, longer hours, to more local destinations.

What would make greener methods more possible for me?

Safer routes – cycle route/ footpath to next village (Kittle), More driver awareness, Good wet weather clothing, availability of alternative fuels, more solar power.

Timescale?

I would like to have better form of sustainable transport as soon as possible. But I can continue as I am until this is sorted out. Longer term plan? Would love a horse and wagon as transport, once there are less vehicles on the road, as the oil runs out.

What resources are available to me?

Van – A reliable if old van. It is small enough to not use too much fuel, but big enough to sleep in. I need to carry some long resources occasionally – paddle for kayak, ladder and pole-pruner for work.

Bicycle – I have a normal bicycle, which I hardly use now, needs a service.

Partner's car – for lifts. At present I can't drive it as not on the insurance (too many points on my licence!!) It has lower fuel consumption than my van.

Wheelbarrow/trailer – my fantastic two-wheeled Trundler, with pram handle makes a great bike trailer and also easy to manoeuvre on foot. I use it a lot for transporting resources and tools around my local neighbourhood.

Money – I do have a contingency budget I can use for van, new tricycle, solar panel.

Feet – good shoes!

Bus service. (hourly during the day)

A good range of bicycle shops in Swansea and Cardiff.

What are my personal limiting factors?

Time – to research travel, vans, electric tricycles etc. Time to organise storage shed.

Time in my working day to get round the places I need to visit.

Physical energy – for hills between me and the wider world (tree nursery/shops/office etc)

Landlady – sheds issue

Weather – my work is often outdoors. Don't fancy travelling miles in the rain on way to and from work/jobs.

What are my personal resources?

Commitment – to trying to reduce my oil dependency.

Experience – of different forms of transport

Knowledge – of vehicle mechanics, using 12v solar power

Ability to build shed

What is my financial budget?

Implementation budget – a few thousand to buy another vehicle/tricycle if appropriate +

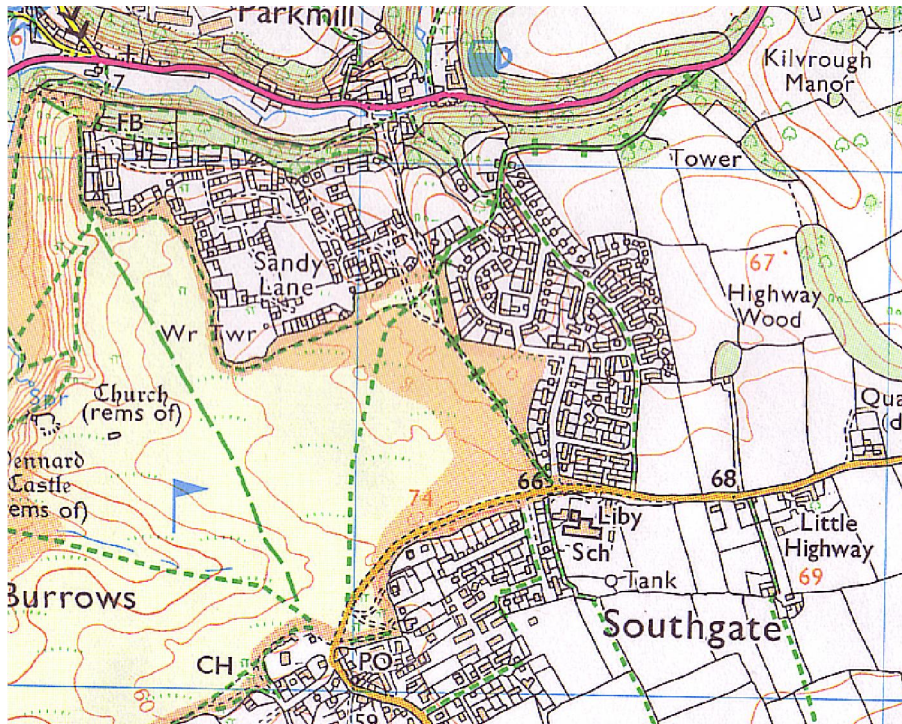
A few hundred to buy another solar panel. Shed?

Maintenance budget – I have enough to maintain my vehicle/s.

Anything else I need to consider?

Partner's needs, getting to visit elderly parents quickly at times.

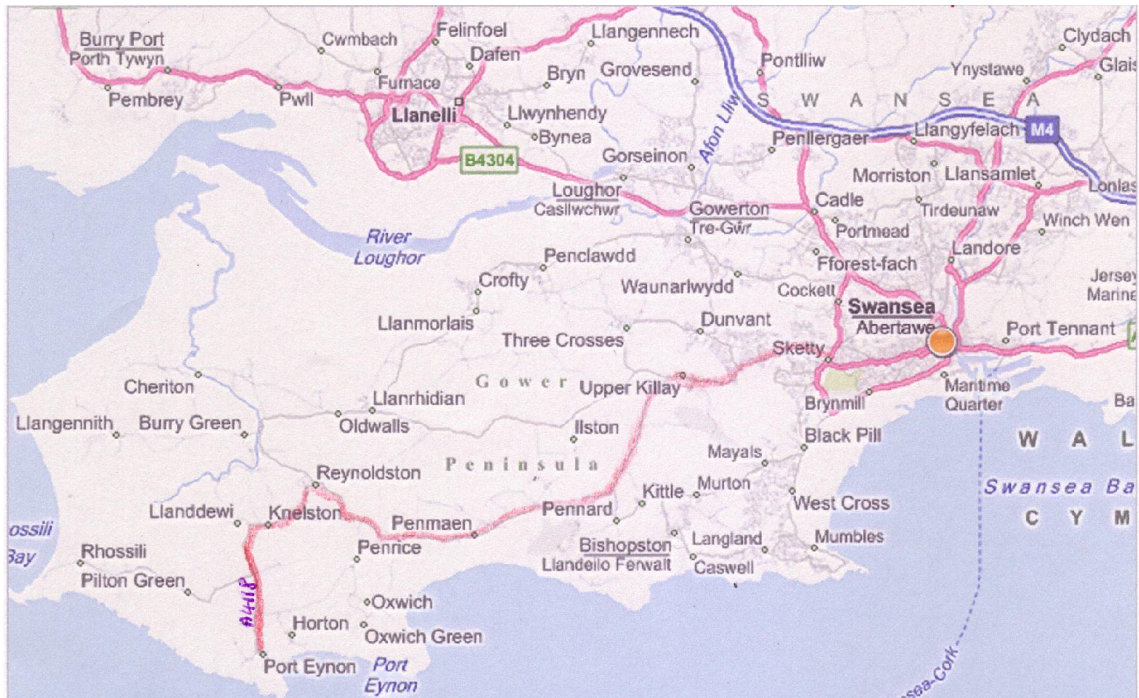
Base Map – Sandy Lane



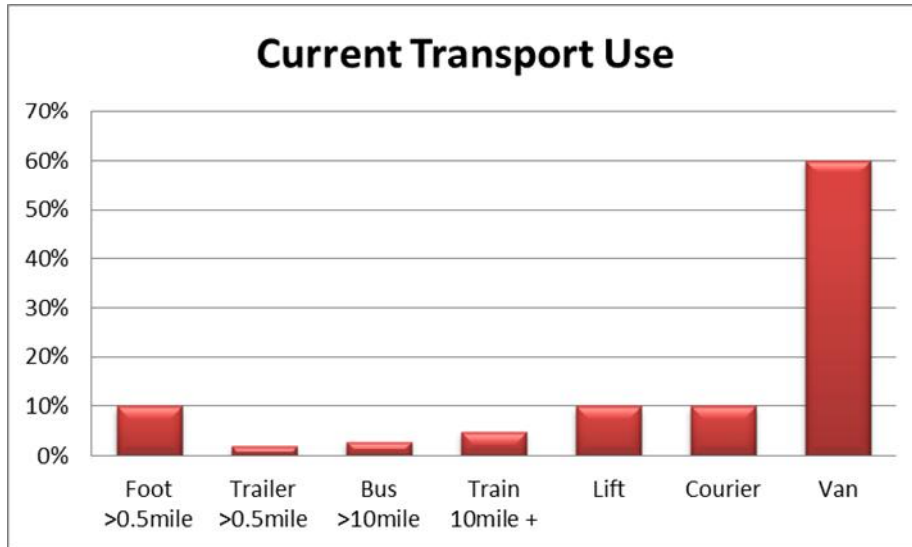
Base Map – Pennard to Bishopston








Base Map - Gower







My Transport Methods



Places I visit	Frequency & Priority (1 is high)	Distance (one way)	Mode of Travel	Carry Resources?
PERSONAL				
Local Shop	Twice Weekly Priority 1	1/3 m		Light
Library	Fortnightly Priority 3	½ m		Light
Local Post Office	Fortnightly Priority 3	1m		Light
Food Shopping	Fortnightly Priority 1	7m		Medium
Consumer Shopping	Monthly Priority 2	10m		Poss. Heavy

Get fuel	Fortnightly Priority 3	3m (exp) 10m (chp)		No – except fuel tank!
Recycling Tetrapaks	Monthly Priority 5	2.5 m		Light/bulky
Dump run	Occasional Priority 5	3.5m		Heavy
Visit local friends	Weekly Priority 3	1/2m		No
Visit friends	Occasional Priority 4	150m		Medium
Visit friends	V Occasional Priority 5	400m		Medium
Visit family	6 weekly Priority 1	220m	 	Usually
Get van fixed/MOT	Occasional Priority 3	5m	 	No

Camping	Summer Priority 5	10m+		Heavy
Workshops/Events	Occasional Priority 4	10m+	Various	Medium
WORK (CF)				
Work Post Office	Weekly Priority 2	3m		Light
Tree Nursery	Weekly Priority 2	3.5m		Heavy
Office	Weekly Priority 2	5m		Medium
Collect trees	Winter (variable) Priority 2	Up to 40m		Heavy
Deliver Trees	Winter (variable) Priority 2	Up to 20m		Heavy
Run Stall	Occasional Priority 3	Up to 20m		Heavy/big
Buy resources	Occasional Priority 2	Internet		Poss heavy
Meetings	Monthly Priority 2	3m		No

WORK (WW)				
Buy spares	Occasional Priority 2	Internet		Medium
Tree jobs	Seasonal Priority 2	Up to 1/2m		Medium
Woodland jobs	Seasonal Priority 2	Up to 20m		Heavy
Woodland Jobs	Seasonal Priority 3	Up to 100m		Heavy

Further Observations

Work at Coeden Fach

The tree nursery is 3.5 miles away and I go there approximately once a week, although it might be more if we are planning an event. Some resources are stored at the site. Other resources are stored at the 'office' which is a building where our post is delivered. We have a filing cabinet there and a bit of storage space there for display boards. We don't have a desk there, but do have an agreement for shared use of the printer. I have very little storage space at home, so tend to need to collect and drop off display boards and other items before or after events. Bulk printing is done there, but we now have a small portable printer so I can do one-off printing at home, to save me driving there. I sometimes have a meeting with the administrator there during the day, or we meet in town at the civic centre. We don't live near each other and both do 5 or 6 hours paid work a week. So travelling about is necessary in the current set up and I tend to travel by car because it involves moving resources or going to several different locations on my work day. I do try to amalgamate journeys when possible – eg I visit a tree nursery 40m away about twice over the winter to collect trees for CF. I usually arrange this for when I am working on a woodland job in the same direction.

Visiting Parents

This is an important regular commitment, as both my parents now live alone (Reading/Worthing) and are elderly. I try to use the train for the visits when I can but sometimes it makes sense to arrange other stops on the way and so then I drive. Getting

the train also involves a certain amount of pre-planning in order to get a less expensive train ticket. Another problem is that a lot of my resources are stored in Reading so I need to drive at least in Spring and Autumn to deliver and collect stuff. At present my mum's car is available as a useful resource, so I can use this to get from Reading to Worthing if I go on the train to Reading. Therefore I can see both parents without my van. It is a fairly demanding trip requiring two half days of travel to get to Reading and back, plus an additional day to go down and see my Dad (and sometimes involves staying a night at his also). I often do house maintenance at my mum's and at times she has needed a certain amount of support around her health. Luckily my brother is there on a regular basis, but I try to make a visit every 6 weeks, which usually takes 4-5 days. I try to make it stress-free for myself if possible and am aware that on occasions I have had to make the trip without notice to go straight to the hospital, which would be difficult on public transport.

MyTransport Design

Analysis

Current Methods of Transport by Zone

Key Functions

SMART goals

Permaculture Ethics

Impact

Financial Costs etc

My Top 3 Choices

Amended Transport Use Graph

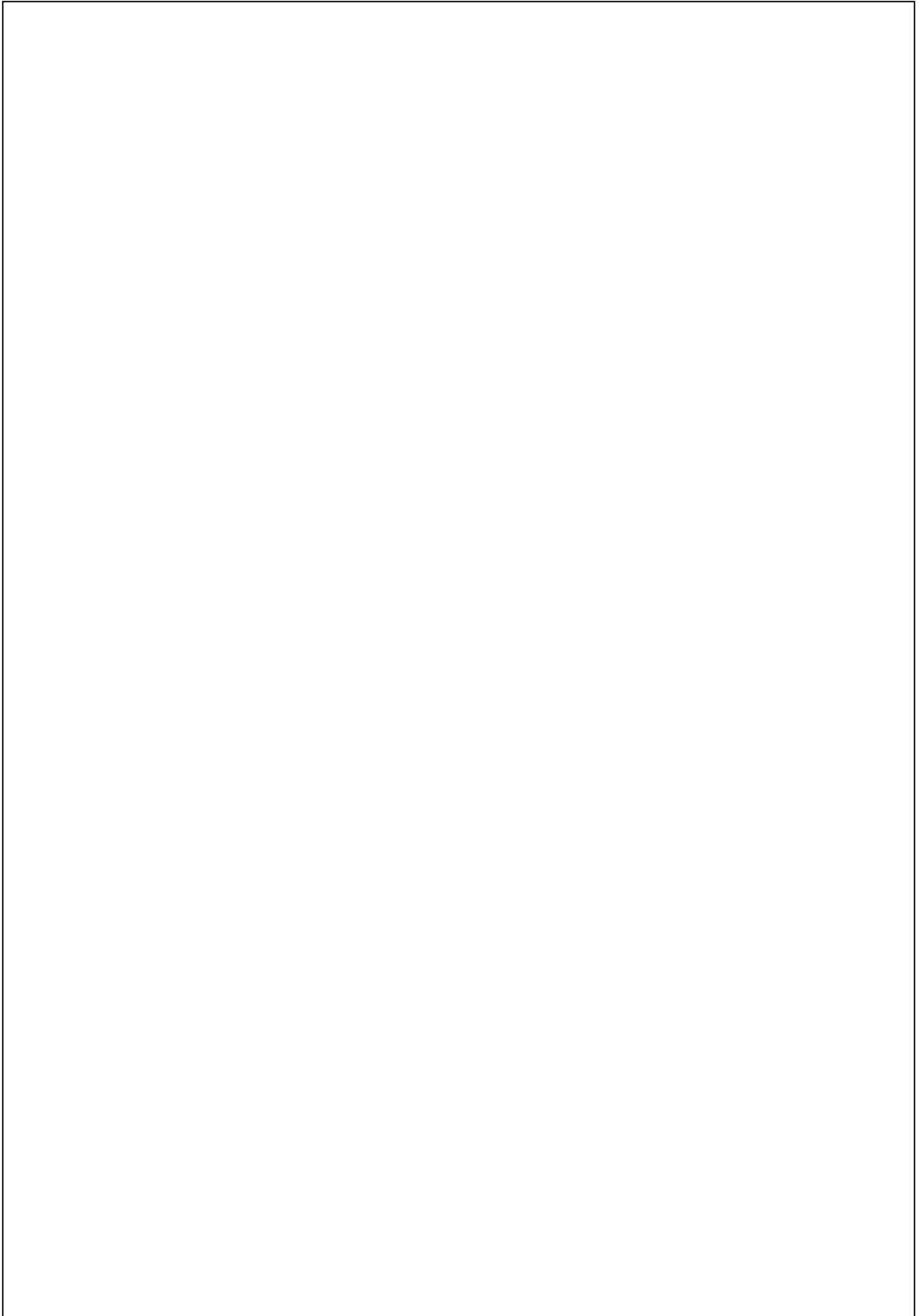
Methods of Transport and PMI

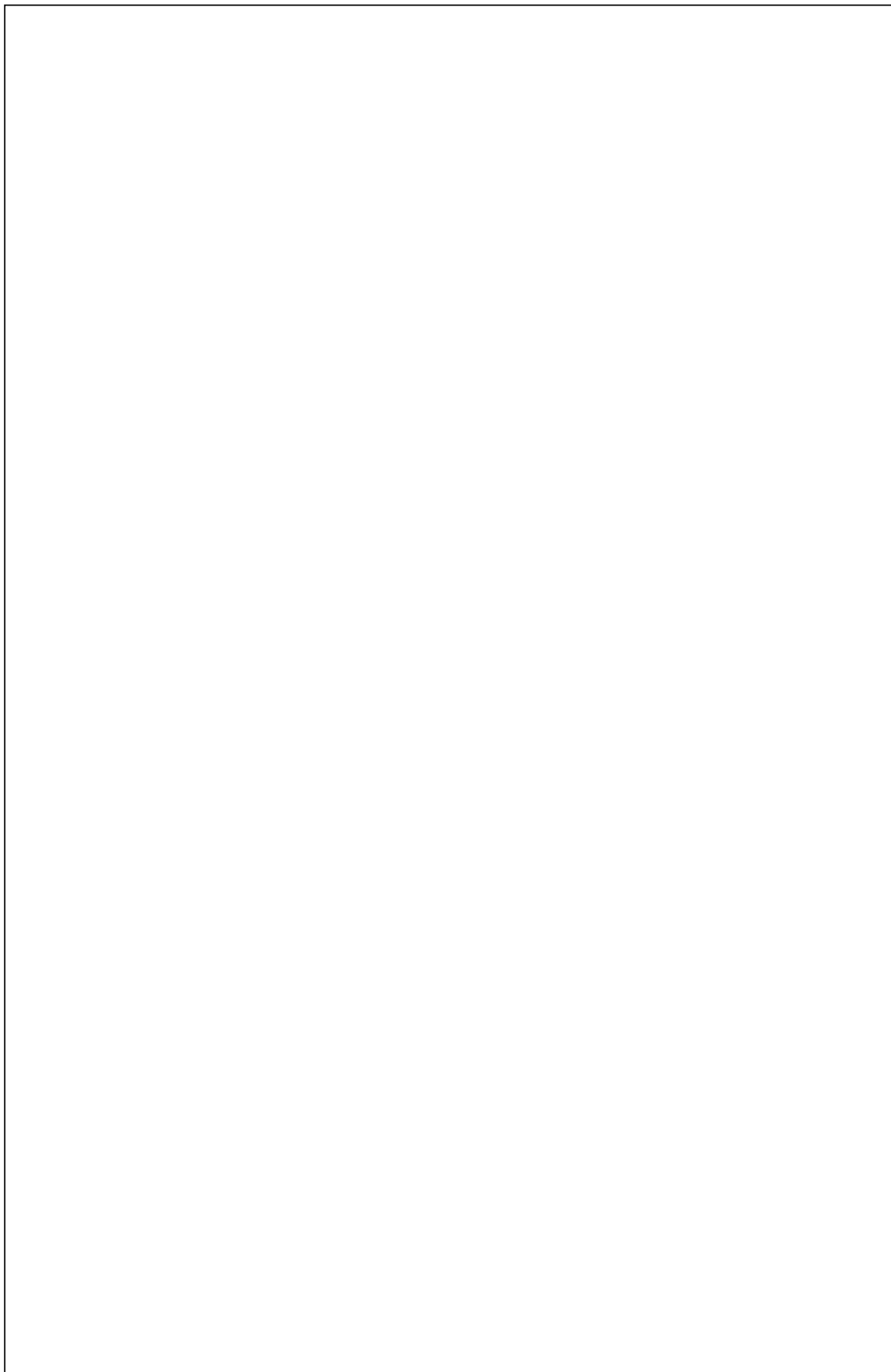
Transport Sector Map

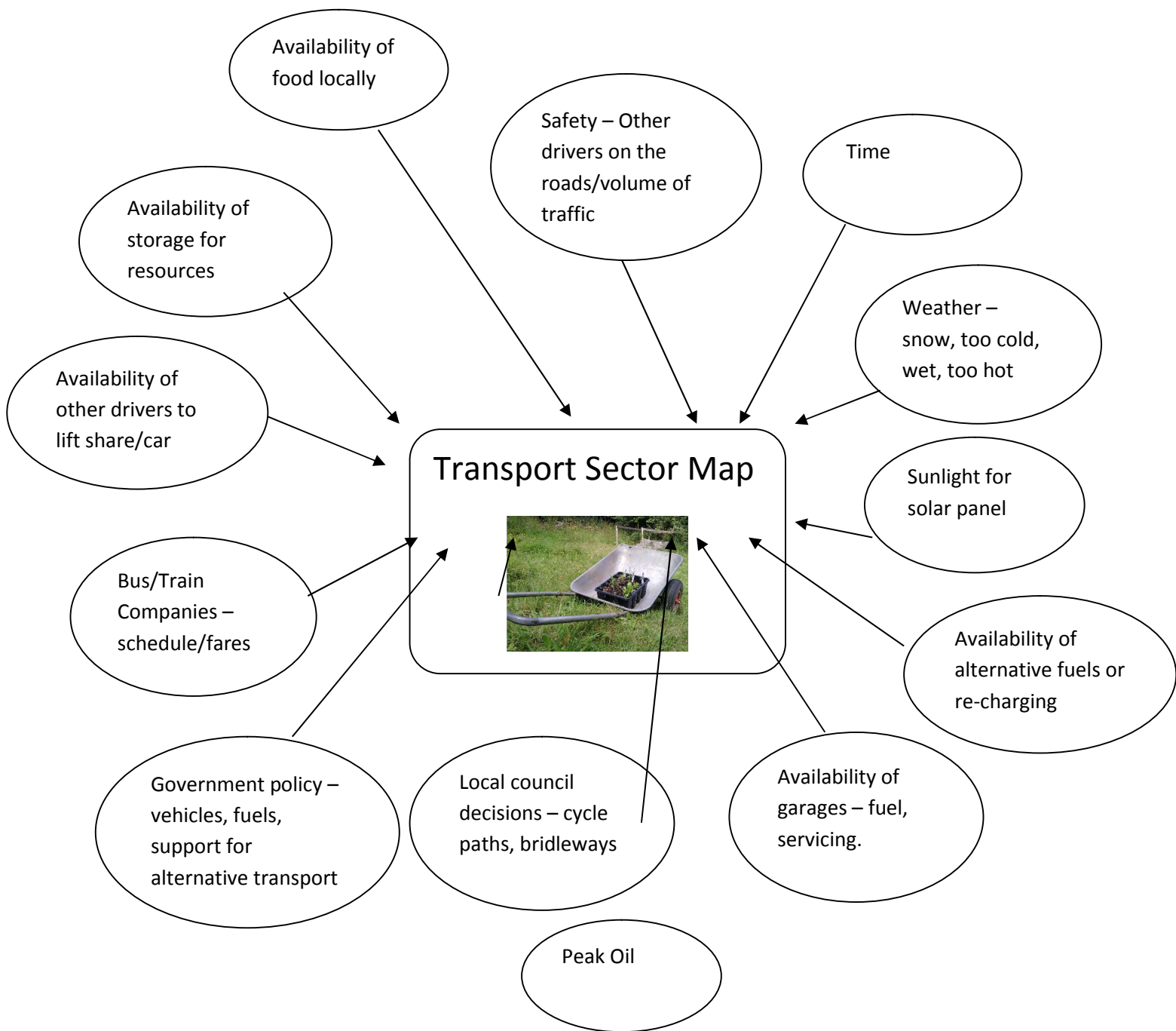
Transport Involving Others Mind Map

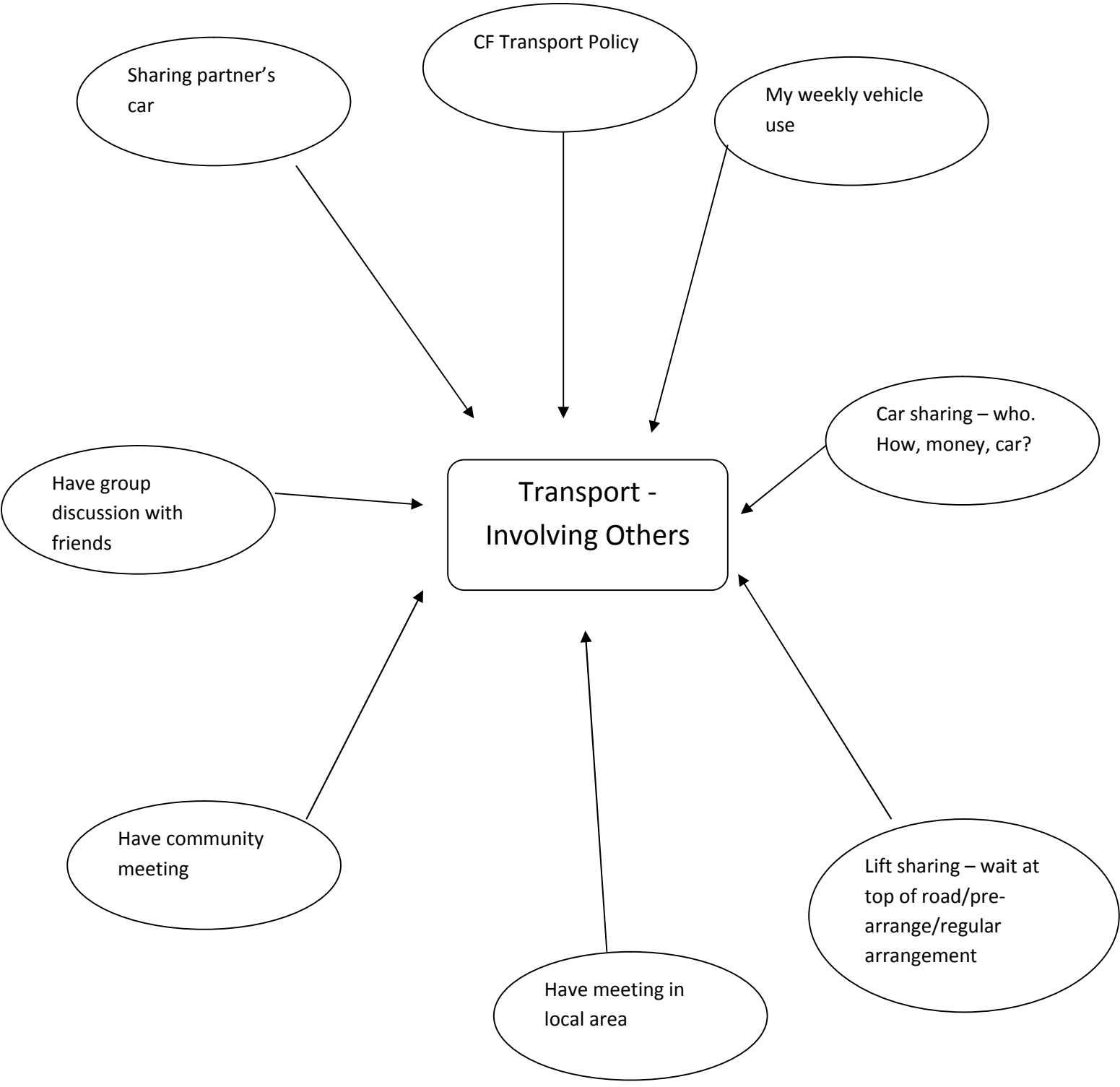
Permaculture Principles

Outputs and Inputs









Permaculture principles

(David Holmgren)

Observe and Interact

Observation - it's hard to take a serious look at something I take for granted in my life. It's such a strong pattern. When I'm in a hurry I just get in the van and drive. When I have a bit more time I think "I could get the bus, but maybe no - I have to go here, here and here and come back after the meeting at 7pm so there is no bus at that time". Standing back and getting a real perspective on my travel use is a challenge. A further principle includes – "Don't think you are on the right track just because it's a well beaten path" – this says it all – my well-beaten path is out my door, along to my gate and into the van! This is true of so many of us. I watch many of my neighbours driving the ½ mile up the track to the school on a regular basis. I know they try to walk up there with the children but often just don't feel they have the time. This leads on to "slow and steady wins the race" – my main dilemma for medium distance journeys is about trying to fit a lot into one day and getting everything done. Using the hourly bus service takes a lot of time.

Doing this design is forcing me to *really* look at my travelling, not just think that I should do something about it one day in the future.

Positives I observe – that I do multitask when driving whenever possible eg take recycling to dump on way into town; go to office on way to nursery site because it is in same direction; save up stuff I need to deliver to nursery site and take in one go when going there for a meeting. When I had an admin job I used to lift share or get the bus most often. It was a lovely walk from the bus stop round the coast path and I used to resent it if I had to take the van instead. I am writing this on a fine summer's day and I can hear my neighbour about to take his boys to school "No, we're walking today boys!"

Catch and Store Energy

Using alternative energy is likely to be a key solution in this design. This could be in the form of Solar electricity. (I am quite sheltered on my plot so wind power would not be suitable.) An electric tricycle would use solar power to help boost my energy, so I can do medium length journeys carrying resources without relying on the van. This will involve being organised and charging up the battery during the daytime when I am at home – probably making use of weekends to do this too. Some tricycles also store the energy you make while cycling.

Obtain a Yield

What is my yield? Making the journeys, getting the resources where they need to go. But also enjoying the view, feeling good about the journey, reducing stress levels.

Inputs and Outputs. More input is needed at the beginning – do research, bring in some new elements into the system and change my patterns. Minimum Effort/Maximum Effect – I need to make it possible for me to use low energy systems of transport which are capable of carrying me and the resources where we need to go. I need to make the most of each journey, especially the high carbon ones.

Apply self-regulation and accept feedback

Finding a transport system of the appropriate scale for my lifestyle. I have a friend who is very good at keeping things simple and she is a good role model for this. From her I learnt about the “Trundler Wheelbarrow”. This is a two-wheeled wide barrow with a pram handle, which is designed for disabled people as it can be used with one arm. It makes a great bike trailer and is also easy to use on foot. I use mine for very local work journeys, as I can carry my tools in the barrow and my pole pruner in the other hand. How could this system translate to slightly longer journeys? A smaller car and a trailer for work perhaps? The addition of a roof rack for ladder/pole pruner would accommodate the longer items. There are a lot of trades people living in my community. They all have vans (mostly bigger than mine) and drive to nearly all their jobs however close because all their tools are kept on racks in the van and they need them with them. Luckily I don’t usually need too many tools. I enjoy being quite visible walking about the lane with my barrow, which always raises a comment from people so I hope that it might inspire others.

Use and value renewable resources and services

My own foot power is a renewable resource which I could use more. It is possible for me to walk to the tree nursery site. I don’t do it because it takes 1.5 hours and I wouldn’t have the energy to do much once I got there! I could get the bus back, or vice versa. If I get an opportunist lift from the end of the road, this often means I get dropped off at the turning and then walk for a mile through the village to the nursery. I value the opportunity to walk places in this way - it is good exercise, fresh air and connects me with the local area. If I was able to follow my horse-drawn dream, this would be a truly renewable resource. I could borrow a horse and ride to the nursery site but would not be able to take much with me. I don’t know of a cart I can borrow. Using different types of fuel – recycled vegetable oil, solar also meet this principle.

Produce no waste

When I was 10 my Grandad wrote in my autograph book “waste not want not”. It was one of the less ‘glamorous’ entries, and at the time I did not really understand what it meant, but I can see now that I am from a long line of recyclers who survived the hard times by

growing their own, making do with what they had eg turning parachutes into clothing. My Grandad was offering me a permaculture principle at an early age!

Reduce, Re-use, Recycle, Repair, Refuse, Re-educate, Re-gift. Reduce my number of journeys by growing more food at home, move home to nearer work, change shopping habits etc. Reduce fuel consumption – speed, driving style, ‘ecoflow’. Re-use my 12v battery over and over again to power my tricycle. Re-cycle – buy second-hand vehicles, keep my vehicles in good order (repair) and pass them on to someone else. Repair – maintaining my vehicles can enable them to last longer and operate more efficiently and sustainably. Refuse to make journeys below a certain yield. How will this impact on my customers? Re-educate – lead by example and talk to others about the changes I am making. Have a travel discussion group? Re-gift – offer lifts to those who have given me lifts.

Energy Cycling - using solar power is a form of energy cycling. Also, each time I use a ‘greener’ form of transport eg making a journey on my tricycle, I would be cutting down the pollution created by using my van instead. Closing cycles – using existing resources at home better so I don’t need to bring in so much eg food, compost, wood. What do I have to transport away from home? Things I lend to CF; landfill (Old or unrecyclable plastic, mixed materials, waste engine oil, broken glass); recyclables that are not yet collected (tetrapaks). Having a good recycling collection helps me reduce journeys – we have plastics collected now. Re-use what I can rather than take to landfill. Any items I don’t want I can put by the ‘Sandy Lane Noticeboard’ for sharing with others as we have a great system of re-use here.

Design from patterns to details

Getting an overview of my transport needs is important. Working out the details of my regular journeys is also necessary, to tailor the design to fit my lifestyle and therefore be a practical workable solution for me. I need zone maps showing the flows - A visual representation of my journeys will really help me to step back and take a good look.

Integrate rather than segregate

I mostly try to meet my travel needs on my own, apart from sharing social journeys with my partner in her car, or camping together in my van. I do share with others when I get an opportunist lift by the bus stop. I never see anyone else I know standing there hoping for a lift. When I used to regularly use that system on a Monday morning, I knew that I was doing something positive - leaving my van at home and travelling in a more sustainable way. However, I felt that people who saw me were viewing it negatively - “oh her van must have broken down” or “she must be on a low income” because getting the bus locally seems reserved for students and the elderly, or women doing shopping. You rarely see a businessman on the bus, or anyone who also has a car (as far as I can tell). This is despite the fact it costs more to use our local bus service than to drive! Using a car share or more formalised lift-sharing is a great way of involving others in the process. My journeys are a

bit irregular, so that makes it a bit harder to organise and needs to be taken into account. Maybe certain things have to become more set eg 'shopping on Fridays'.

Use small and slow solutions

'Slow and steady wins the race' is an excellent principle for me to engage with. I do tend to rush around trying to get lots done. Slowing down will help me to widen my range of travel options. This is hard in a world that encourages us to achieve and move faster. But I don't have to follow that well-travelled path... Low power travel is slower but it will get me there, it's just a question of re-patterning to allow a different length of time to get places. It's about changing the scale. Also I need to make the changes in a manageable way, one step at a time. This is less scary and more possible. It will enable me and others to get used to the slower travel. Slow and steady travel, implemented in a slow and steady way.

Use and value diversity

Having a variety of options for travel enables me to make appropriate choices and to ensure I can make important journeys because I will have a back up. Using different forms of power increases the sustainability of the system. If I just have the van for longer journeys and it breaks down, I can't go. I have lost work this way in the past. So I need 3 elements for each function. EG I can get to nursery site by bus, in my van or cycling.

Use edges and value the marginal

The edge in my design is the interface between my zones, the interface between me and others I engage with in my work and personal life in various locations. It is the interface between the different levels of sustainability of the elements of my system. It is about not just following the well-beaten path to my van. So I need to consider how others can assist me (and me them) in making my transport systems more sustainable.

Creatively use and respond to change

The world today is at peak oil. Changes have to be made to our fuel needs. Oil based travel should be reserved for essential journeys such as for ambulances and the fire brigade. I can no longer justify using oil to create a social life or to save time. However, before changing anything I need to observe well and think hard in order not to make changes too fast and risk failure of my system. This links to 'observe and interact' – I need to make slow changes and observe how they work in my system. I can hold a vision of my transport plan and work towards it. A thought about succession. An example of succession in transport terms might be – i) people develop machines to help them do things faster ii) people then want to travel faster so the car is invented iii) existing trackways slow the cars down so a hard surface is added iv) single lane trackways do not allow people to pass each other, so tracks are widened v) tracks are not direct enough so roads are built going from A to B vi) towns become too busy so ring roads are developed vii) people want to go even faster so faster

cars are invented viii) faster roads are now needed to motorways are built ix) all these changes encourage more people to drive, so the motorways are too crowded. Motorways are widened and another lane is added x) ditto, another lane is added ... and so on! Motorways are the climax 'species' of the current transport system! I can see that using slower transport forms is like trying to go back to the beginning of succession - to the original slow track. (footpath/cycle path/bridleway). This feels like high input because motorways are 'easier' to use. In a garden we would add plenty of ground cover and mulch. In this system we need to add more slow tracks – they are the groundcover.

Multiple functions for each element

My design will include system or elements that fulfil at least three functions eg by bus I can get to town, the tree nursery and a daytime meeting. I also require a diversity of elements for each important function eg for food shopping I can walk to the local shop, get a bus into town and be part of local food collective (we buy in a wholesale wholefood order once every 6 weeks.)

Other Principles

Relative Location

This principle is key to the design – meeting the required functions in various locations defines the transport needs, taking into account public transport availability, road systems, cycle access etc. The more that important functions can be met locally (eg shopping, work meetings) the less I need to rely on mechanised transport.

My Transport Methods Notes on Outputs and Inputs Diagram

I have used this tool in a number of my designs as a useful way of exploring the relationships between elements. In this design I adapted the exercise because the elements do not provide inputs or outputs for each other. I have used it more as an evaluation tool to compare the methods.

First I have listed the methods of transport down the centre. I then thought about the inputs I would need for these methods, and added how they fit into the 'Hierarchy of Resource Use' (See Analysis pages). For example, Personal Energy temporarily disappears when used but this energy can be replenished ie we get worn out if we walk a long way but after a good night's sleep, we can do the journey again the next day. Pollutants are harmful when used, so the fuel used when getting a lift, using a courier service or my van (with non-renewable fuel) requires chemicals that are polluting to the environment and is not replenishable environmentally.

I then thought about the outputs of each method of transport, in terms of an evaluation. For example, 'Electric Tricycle' needs the inputs of 'Solar Power' and 'Money to Buy'. The outputs are that I can carry resources and myself up to 20 miles. It is cheap to run and fun. Example Two, 'Van' needs the inputs of 'Money to Buy; Money to Run; Oil and Pollutants.' The outputs are that I can transport myself or resources any distance. It is expensive to run, has a high carbon footprint and high greenhouse gas emissions.

I have used colour to show the less harmful methods in a lighter colour, working down to a dark green for the least sustainable methods. All the methods need some inputs, some need just personal energy and some need money plus an external form of energy eg solar power or oil.

Transport Design

INPUTS

OUTPUTS

Personal Energy
(Temporarily Disappears)

Solar Power
(Temporarily Disappears)

Money to buy
(Temporarily Disappears)

Money to run
(Temporarily Disappears)

Oil
(Reduced by Use)

Pollutants
(Harmful when Used)

On Foot

Trailer

Bicycle

Electric Tricycle

Bus

Train

Moped

Lift

Courier

Van

- Self up to 5m
- Free!
- Relaxation
- Exercise
- Slow!

Resources up to 0.5m

- Self up to 5m
- Cheap to run!
- High personal energy
- Exercise

- Resources up to 20m
- Self up to 20m
- Cheap to run!
- Fun!

- Self up to 20m
- High Carbon Footprint
- Expensive
- Slow/Unreliable

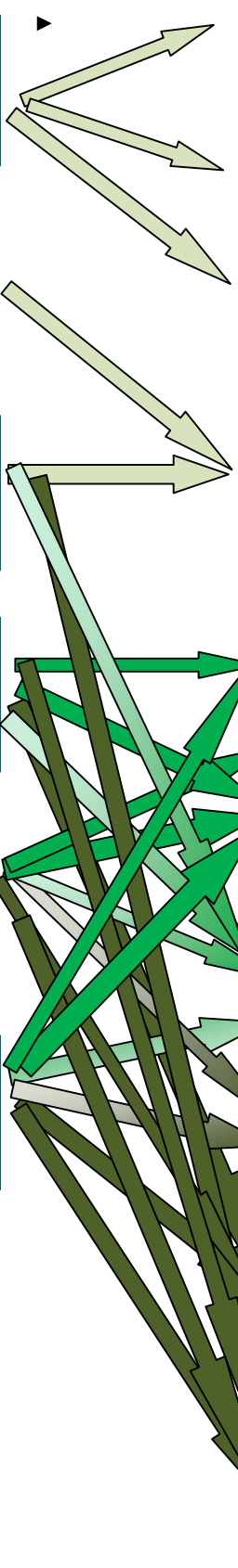
- Self 20m+
- Medium Cheap
- Book in Advance

- Self up to 20m
- Medium Cheap

Self any distance

Resources over 20m

- Self any distance
- Resources any distance
- Expensive to run!
- High Carbon Footprint!
- High Greenhouse emissions!



MyTransport Design

Design

Zone Maps

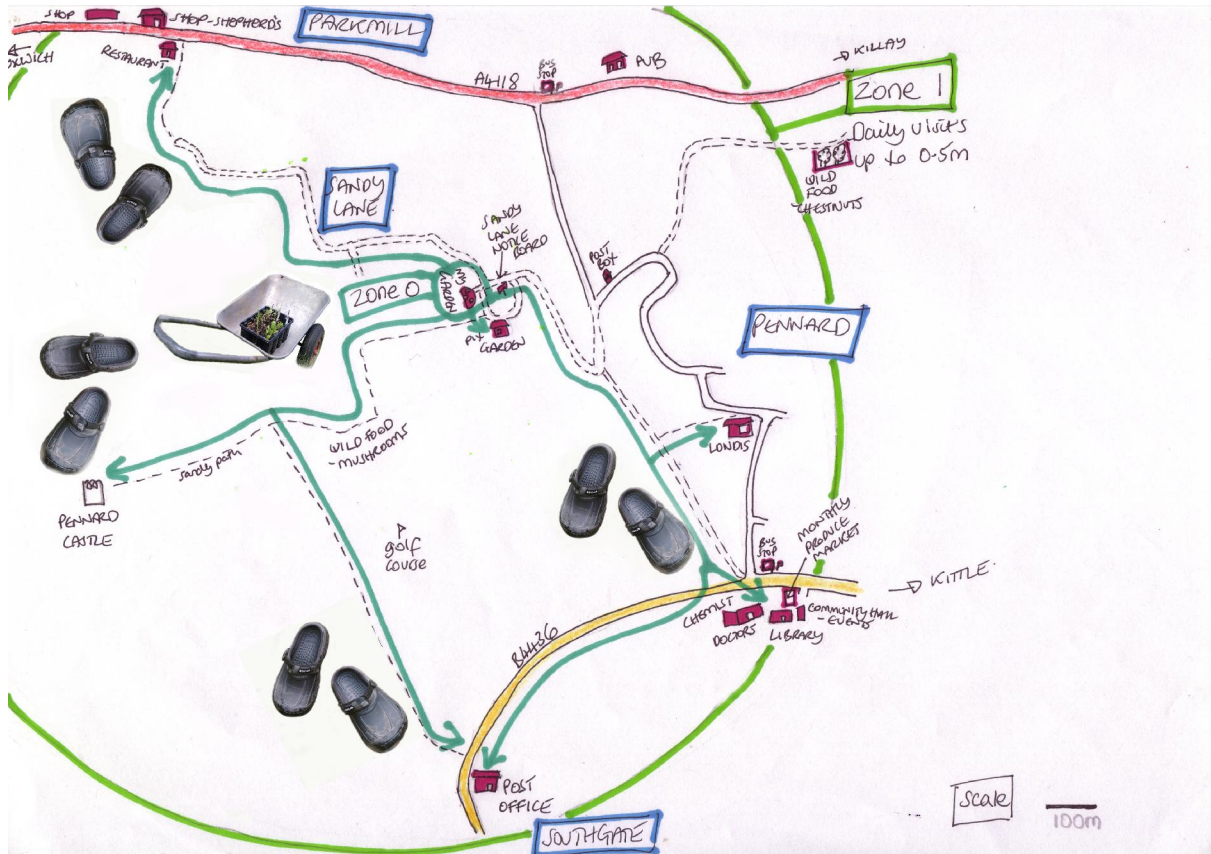
Shop Local mind map

Strategies for Limiting Factors

Transport Design

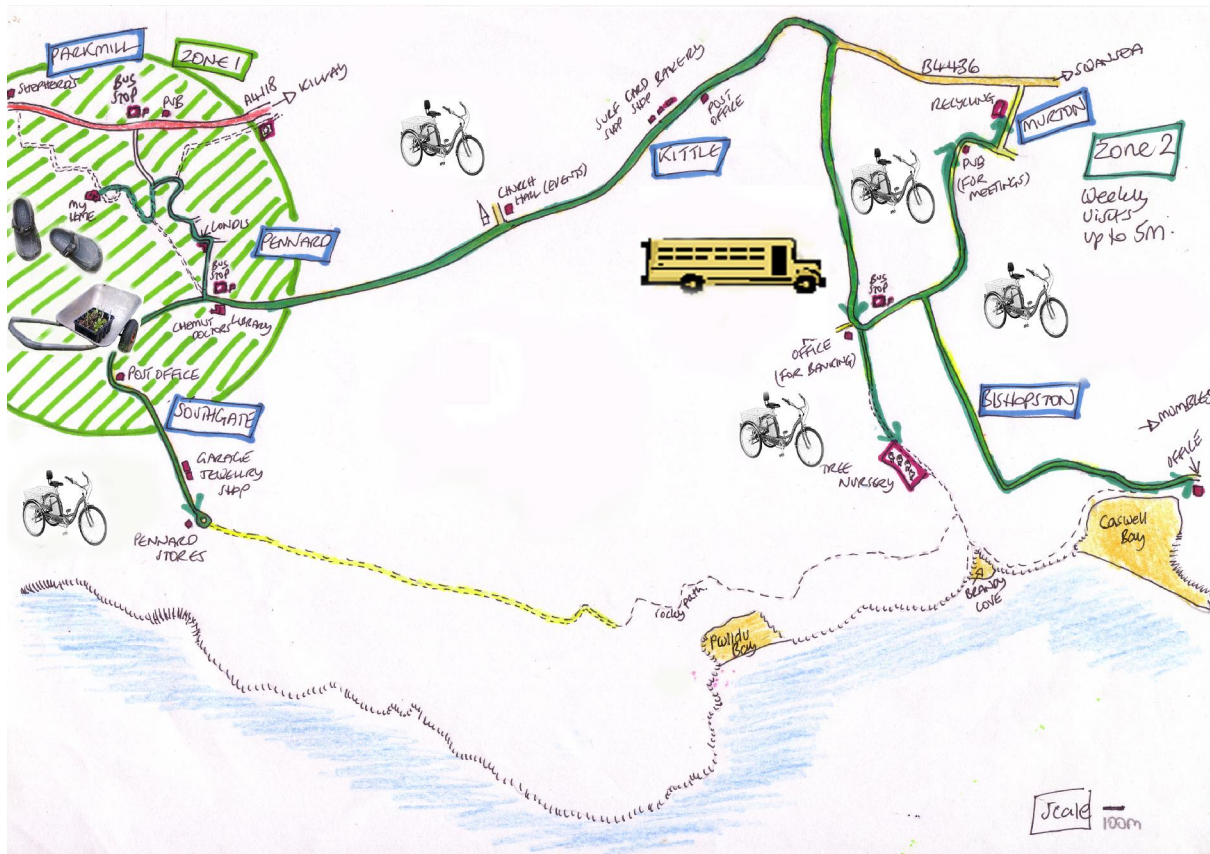
Zone 1 (Sandy Lane)

This is unchanged from the base map in "Transport Analysis" because it already meets the needs of my design.



The following maps show my zones 2 & 3 with new forms of transport indicated:

Zone 2 (Pennard to Bishopston)



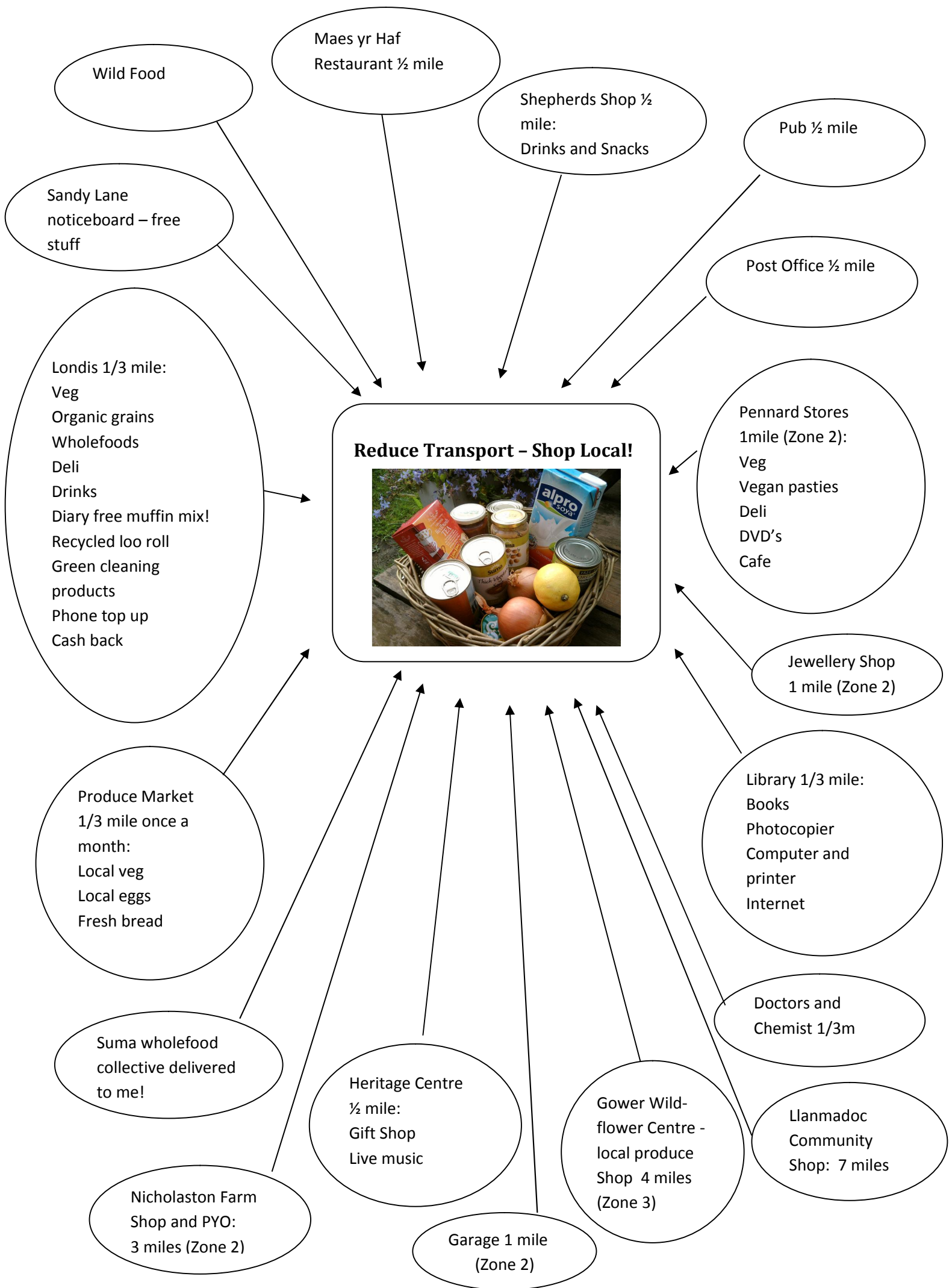
Zone 3 (Gower)



My Zone 4 Map would still require use of my van for taking resources to jobs and collecting trees, but this would hopefully use an alternative fuel.

Zone 4 (West Wales)





Transport Recommendations: Strategies for Limiting Factors

Buses

- Hourly – Get lift in morning. Use bus to come home.
Arrange meetings to fit with bus times
- Daytime Only - Lift share (someone who has appointment on wed eves?)
- Inaccessible Routes - Take folding bicycle?
Relocate office
Re-arrange admin meetings

Vehicle Fuel

- No local biodiesel - Reduce van use
Set up biodiesel collective
Buy a different vehicle – LPG or vegetable oil conversion

Cycling

- Safety – High visibility clothing
Cycling helmet
Flag
- Hills - Solar electric power
- Weather - Good wet weather gear

MyTransport Design

Implementation

Action Plan

Implementation

Transport Design Action Plan

My SMART goals are

*By autumn 2011 I will have reduced one need I have for transport.

*By spring 2012 I will have 2 new ways of meeting my travel needs and will have reduced my van use by replacing medium journeys with a low powered form of transport.

*By spring 2012 I will have agreed new transport arrangements for meetings/resources with CF and will have 2 new ways of meeting my travel needs.

Here's how I will meet them "Use Small and Slow Solutions":

STEP ONE

Change the pattern - Change my well-beaten path
Slow down!

STEP TWO

Share my ideas - Have a travel discussion group

STEP THREE

Change shopping habits – Grow more food at home
Do a weekly shop at the local Londis on foot
Use public transport or liftshare to buy food over 2 miles.

STEP FOUR

Make things easy - Get better wet weather gear & visible clothing

STEP FIVE

Work with local services - Arrange meetings during the day so I can get bus

STEP SIX

Do less in one day - Plan to get bus to nursery site and allow time for this

STEP SEVEN

Reduce transportation
of resources - Use less resources
Find a way to store things where they are needed.

STEP EIGHT

Increase edge - Ask others at work to share moving resources
Lift share, car share

STEP NINE

Increase yield -

Add more yield to each high carbon journey – offer a lift as well. Value the yield of relaxation, exercise and beauty.
Add roof rack and/or trailer

STEP TEN

Maintenance -

Maintain all my vehicles regularly
Fit 'ecoflow'

STEP ELEVEN

Reduce oil use-

Purchase a tricycle (preferably second hand)
Purchase an additional solar panel and battery to power it.
Buy smaller van
Use recycled vegetable oil

STEP TWELVE

Green Incentives-

Apply for government tax incentives

Transport Design – Implementation

I started work on this design four weeks ago and I have already taken a look at the Action Plan and have begun to put the first three steps into operation:

Step One ‘Change my well-beaten path’ - Immediately I noticed with surprise that my van had not been out for a week, so I am using it less without even trying. During July I only did 3 journeys in my van. (One of them was 500 miles! – but this was for a funeral)

Step Two ‘Have a Travel Discussion Group’- I have not had a meeting with local people yet, but I have been talking to friends individually about transport.

Step Three ‘Change Shopping Habits’- I have been food shopping at the Londis successfully. I have used local services such as the Doctor’s and chemist (on foot). I have planted out more vegetable plants in my garden - for local food. I am enjoying walking about and trying to think creatively about my travel. I am working more from home and checking in with the administrator by phone. This is partly because I have reduced my hours and it saves me time, but also I am considering more about not driving for the sake of it. Having a small printer at home really helps too. I feel like I am slowing down.

Step Eleven ‘Purchase a Tricycle’ – I did have a look at a second hand tricycle in a bicycle shop in Worthing when I was there. It was a Mission Cycles Trilogy Trike. It was good to see it was quite sturdy and I was impressed with the size of the basket. I didn’t buy it because it was overpriced and had some rust, but it was good to start my research.

I will continue to implement the action plan, and meanwhile continue to maintain the progress I have made.

How fascinating that reducing my oil dependency looks like a 12 step programme!

MyTransport Design

Maintenance

Transport Design – Maintenance June 2014

I created this design 3 years ago and have put most of the steps into operation and have tweaked some:

- ✓ Step One 'Change my well-beaten path' – Over the winter 2010 I was without a van for a couple of months so this really helped me adapt my patterns. I now use my van less, and try to get as many yields from each journey. I make use of car sharing more. My travel has slowed down.
- ✓ Step Two 'Have a Travel Discussion Group'- I did not do this, but I do talk to others about transport issues, car share more and use this design at workshops.
- ✓ Step Three 'Change Shopping Habits'- I food shop more locally and make more use of local services. I grow more food at home. I am working more from home and taking on local work.
- ✓ Step Four 'Make things Easy' – I have now got good wet weather gear – was fortunate to find it in a local charity shop.

Step Five 'Work with Local Services' – I have now changed my job and work from home more. However, I would try to arrange meetings where necessary during the day so I could go by bus.

- ✓ Step Six 'Do less in one day' – Since 2011 my working hours dropped and I cut down on stressful activities, with smaller 'to do' lists. This makes it more possible to consider public transport, cycling or changing my day to fit in with a lift share. As I work more from home I am also more in charge of how much I do.
- ✓ Step Seven 'Reduce Transportation of Resources' – I am ensuring my journeys have increased yields. I am hopefully moving soon and will have less stuff in storage. This will mean less reliance on moving things about by van.
- ✓ Step Eight 'Increase Edge' – I changed my job role and now others at work share the workload better, including moving resources and transport to events.
- ✓ Step Nine 'Increase Yield' – I am doing this by taking recycling for other people, giving lifts, doing more with each journey.
- ✓ Step Ten 'Maintenance' – I bought a more fuel efficient van and keep it serviced. It could¹run on biodiesel but I'm not able to get any at present.
- ✓ Step Eleven 'Reduce Oil Use' I have had to tweak this step. I did buy a tricycle (Greentech 250W power) and a new solar panel (from a very local supplier). It was a great experiment and I was able to take it to the Permaculture Convergence to demonstrate at a workshop.

However, I found that the tricycle was very difficult to use on a daily basis as I live down a longish rough track which is very uneven and has a hill on the return journey. The tricycle was difficult to ride on the uneven camber and heavy, so it could not be used without the battery power. I worried about not being able to get it home, and I found that I was not using it as much as I had hoped. It was stored in a very basic shed and I felt that it would deteriorate. The battery went flat and I had to buy new batteries. If I lived nearer to Swansea I would have been able to use it along the coastal cycle path. I considered if this was possible but at present it isn't, so I decided to sell it so that someone else could put it to better use. My Dad gave me his folding bicycle which I can use for short journeys and also in conjunction with my van.

Step Twelve 'Green Incentives' – The government now runs a 'Cycle Scheme' under the Green Transport Initiative (2014). This enables employees to get a bike and safety equipment tax free through their employer. The pay for the bike via their salary. Employers have to register for the scheme and take payments from their employees. Certain shops are part of the scheme. See www.cyclescheme.co.uk.

My Transport Design

Review

Survey

When working on the design, I began by mapping out my zones and considering what transport I use at present. I made a chart of my destinations and frequency of journeys. This was a very helpful way to start looking at where I am now. The sector map helped me recognise some of the key issues.

Analysis

It was interesting to map out my journeys which helped me see the divisions between very short journeys, slightly longer journeys, journeys around Gower and then journeys over 20 miles. From this I can see that transport that enables me to carry resources is important.

I realised I needed other's input and to share ideas so I decided to arrange a discussion with my friends to share our travel dilemmas. In the meantime I asked a few friends and neighbours for their thoughts. One neighbour who uses LPG said if he couldn't get LPG he would probably look for an electric car. A friend said if she couldn't use her van for camping in she would stay at people's houses instead, while another said she felt she could manage with a camping mat and small tent.

I have used this design to explore David Holmgren's principles, which is the first time I have really got to grips with them. They seem to suit this kind of design but I do find them a bit too 'obscure' to use for my introductory courses.

I deliberated a bit with the functions – whether they are “food shopping” and “meetings” or “travel $\leq \frac{1}{2}$ mile” and “travel over 10 miles”. I decided to go for the latter as my different travel needs are defined more by distance than content. It is also less clear with this sort of design what the difference is between the analysis and the actual design. I did start out using OBREDIM but I changed it back to SADIM because I was struggling a bit with that and need to get it done this week. I'll have another go with that on a different design.

Looking at my transport possibilities gave me the opportunity to do lots of research on electric tricycles. There are quite a few on the market, with varying levels of quality. It is hard to actually get to see some or try one out, as no shops stock them locally. However I did see one while in Worthing and that was helpful to get an idea of its actual size. I planned to visit a tricycle producer in Lampeter but have not been able to meet with him yet. I will also go to cycle shops in Cardiff to take a look. I discovered that there are government tax schemes for electric tricycles and cyclists. These include tax breaks for employees and provision for food after cycling!

I struggled with finding accessible research on carbon use and embodied energy for different methods of transport. Wikipedia has various information but most of it is not very easy to comprehend. Aranya pointed me in the direction of a section on equivalent fuel efficiencies which was useful. I also found various helpful information on Green Driving, Low Carbon Facts and how many trees to plant to offset driving. However, I do not feel this section is as useful as it could be for my readers and I'm sure there must be some clear UK carbon calculations somewhere so will keep looking.

Design

I felt a bit panicked when I got to thinking about solutions, as moving resources long distances is a challenge. (eg my personal stuff from my mum's, or my tools to a woodland job 100 miles away). I thought – how can I produce a permaculture design for this with an end result of still using my van – UNSUSTAINABLE! = “Produces resources that harms other resources!” However, if I bring in the concept of ‘Limiting Factors’ I can see that I do have to work within the limits of my present situation. THE PROBLEM IS THE SOLUTION! – there are ways to limit, change and transform the use of my van over time. Aranya encouraged me to also look at the ‘value’ of a journey – ie do the benefits of the journey offset the costs in some way eg if a tutor travels to run a course in order to save 20 students all travelling to the tutor. For me being able to camp in my van when returning from a stressful family visit has value. A trip like this also enables me to visit friends along the way – added yield of people care.

I live in a rural area so there are currently a number of limitations locally – poor public transport (there are places I can't get to and times of day I can't travel), shops too far to walk and narrow lanes are a safety issue for cycling. This design has enabled me to work creatively with these constraints and I think the most exciting idea to come out of it for me is looking at how I can reduce the need to travel.

Serendipity – our local Londis is supplying wholefoods now! This shop has gone through a few transformations over the years and recently was looking more like the Asda butchers counter. They even took all the community posters down from the window to put up adverts about cheap meat! However, this week they have devoted an area of the shop to organic food and wholefoods and a while ago they also set up a chiller section for the veg which was a great improvement. There are more things I would like to see there, but hopefully I can ask now that they are moving in the right direction. There are loads of local customers who shop for alternative diets and wholefoods. So I experimented and walked over to do my weekly shop there, to see if I could get everything I need. I really want to support them so they develop the range. I bought local eggs, veg (not organic but UK) brown rice, bread, dairy free chocolate, wholefood soup, wholemeal flour, avocado humus and a treat – wholefood omega 'grisini' sticks, and recycled toilet roll. They also have a good range of green cleaning products and recycled aluminium foil. My first shopping trip

Top Tips for a Personal Design

- ✓ Asking yourself questions from the 'Client Questionnaire' offers a chance to take a fresh look at your issues and challenges
 - ✓ Using illustrated tables and charts livens up the analysis
 - ✓ Tailor the Permaculture Principles to meet the needs of the design
-
-

was a success and I have continued to shop there on a weekly basis buying as much as I need to reduce trips into town.

This is the first time I have used Aranya's book on my own. I found it a very helpful structuring tool. I do tend to feel like I should apply every single idea in the book which can feel overwhelming! But I think I'll let go of that now that I have worked with it for a while.

This design was also a great opportunity to get to grips with some IT graphics. Aranya had told us about "Free Mind" during our support weekend, so I decided to give it a try. I have tended to do my graphics freehand, because it's nice to be off the computer for a while, and also, my laptop was very power hungry. Now I have a new netbook with a long battery life, it's interesting to take the time to try out different presentation methods. I have used Mind Maps (Free Mind); Flow Charts (Word) and Tables (Word). I also wanted to be able to send this design to Aranya for my DST, so thought it would save a lot of scanning if I did it all on the computer! Found 'Free mind' a bit fiddly but got quicker as I learnt the shortcuts. I can see there's quite a lot of ways to make the presentation better so will continue to work on that.

What I have got most from with this design is the idea of NOT travelling! It has been amazing to really take stock of the wide range of services and shops available to me right on my doorstep. So this design has led me to change both my transport habits and to shop more sustainably too!