MACRO ISSUES

Following is a fairly comprehensive list of the main items we considered in this phase of the layout planning. They are not in any sort of priority. Some deal with the physical aspects, while others deal with the softer or more philosophical aspects of the layout.

1. If **operation** is a primary objective, then start as soon as you are able. I cannot stress this enough. You will benefit immensely from the experience gained during those early sessions and it will be easier to change or adapt if you are not too far advanced. The further you are along the more you'll try to convince yourself that a change is not required – when, often, you'll realize it is! Also, you'll detect problems earlier and be able to fix them as they come up rather than waiting for the layout to be "done", only to spend many potentially frustrating hours resolving issues and rebuilding things. Most model railroaders I know enjoy operations at all stages of a layouts progress, so don't wait until "you have everything ready". Over the 15 years we operated the previous layout we successfully researched and developed an increasingly more comprehensive and accurate ops scheme which forms the core methodology for operating this layout. Since operating the layout is a high priority for me, with only 40% of the mainline completed (May 2015) and barely 3 years into the construction – we commenced operations.

2. Go **DCC** right from the start! This was an absolute requirement for this layout. My previous layout was started before the advent of the DCC standards that we are all now blessed with. After hearing "who's got my train" so often we did a major full conversion of the layout to LENZ DCC in 2004 in preparation for hosting several op sessions as part of the Seattle PSX National convention. The previous layout had all tethered throttles because the LENZ system had no compatible wireless throttles at the time of the conversion. However, due to industry advancements, a combination of wireless throttles by CVP (http://www.cvpusa.com/) and tethered LENZ (http://lenzusa.com/) throttles have been successfully installed for this layout. Wireless throttles was a must have for this layout due to the length of the mainline. The debate within my crew continues on the advantages and disadvantages of each. While wireless throttles have distinct advantages of mobility, I have noticed that operators sometimes drift away from their trains and become somewhat disengaged and even distracted while using wireless throttles.

3. Install the **staging yards** right away if possible – even if it is temporary and/or movable. I would also recommend open and accessible staging if you have the space. The previous layout had open staging yards on both ends which was very successful. The new layout will have primarily open staging yards which are being designed as an active yard/station area as well which creates the additional benefit of effectively creating the opportunity for more crew positions at each yard if desired. By assigning a crew member to the staging yard, it expands the crew size, and can also accomplish some restaging during the ops session rather than having to do it later.

   On this layout, to date we have constructed a significant portion of the east staging yard which also doubles as Proctor on the Nelson Sub. as well. This area will eventually include the prototype 3 track barge slip for the Kootenay Lake barge operation that ran into the 70's.

   The west end of the layout is currently terminated in a 4 track temporary staging yard constructed on removable modules just west of Castlegar. This yard can be relocated along the mainline as the layout is extended to the west.

4. As much as possible, work the **backdrops & dividers** out ahead of time – they are definitely easier to build before the layout is there or as part of the rough framing! I added several curved corner coves, and two major backdrop dividers down each peninsula well after the previous layout was underway. As a matter of standard practice I would put dividers down every peninsula to block sight lines from one aisle to the next. It helps create the illusion of distance and a sense of isolation by preventing operators from seeing the rest of the layout. They also provide a nice setting for the trains and aid in photography. I have observed over the years that it seems more realistic, in my opinion, if a train crew cannot see the other trains that are coming their way or the other operators. My previous layout was divided into 3 separate "valleys" in this manner and was quite successful in that regard. This layout applies the same philosophy. I would also recommend keeping the backdrops open a bit at the top for cross ventilation and lighting.

5. Don't adopt a "build it and they will come" approach when building an operation focused layout. This layout is about 2 ½ times larger than the previous one and a concern is whether I will be able to muster sufficient crew to operate on a frequent basis. The previous layout has hosted 8 to 12 sessions per year and typically required 7 or 8 operators. There was no problem filling that demand, and often I had to decline requests to operate. In recognition of the potential shortage of operators, the layout is being constructed in phases utilizing a movable staging yard on the west end. In addition, the operations scheme will be scalable by having several aspects that can be left out of a session should we have insufficient crew. These would include;

    1. the operation of the two CP branch lines (Slocan and Phoenix Subs),
    2. the pusher service on the grades either side of Farron,
    3. use of the Kootenay Lake rail barge in Proctor, and
    4. the interchange trains with the GNR at two locations.

    In fact, other than the pushers, the other trains described above would typically only run a couple of times per week and not every day. Consequently we will be developing more than one schedule to accommodate for this. I have seen this concept successfully incorporated into other layouts.

6. Consider what type of **communications system** you want to employ on the layout while it is being planned and constructed. The choice will depend on several factors such as; era, layout size, your desires, and economics. 5 channel radio headsets were used on the previous layout, and the train crew became the agent operator at the stations. While this method worked ok, it is not very prototypical for a TT&TO layout such as mine, and the headsets were somewhat annoying to the operators. The new layout will have a multiple handset telephone system similar to that employed on Mark Dance's C&W layout.

7. A GML fast clock system was salvaged from the previous layout (http://www.thegmlenterprises.com/) and was installed before formal op session were hosted. It currently is set at a ratio of 4:1, however, that may change once the lengthy mainline starts to be completed. The Dispatcher is located in a room that is adjacent to the main train room and we have found that to be a good decision since it isolates him/her from the layout and crews.

8. **Interchanges** with other railroads, or other subdivisions are important to creating a sense that the layout is part of a larger transportation system. The railway line and era I have chosen provide great opportunities to employ several prototype interchange locations to expand the "territory" of the operation scenario. These connections include;
    - Staging yards on the east & west ends of the layout

- Kootenay Lake Rail barge operations using a 3 track slip in Proctor – which is part of the east staging yard.
- Portions of the Slocan Subdivision, including the major mill at Slocan City, and the Slocan Lake rail barge operation.
- Portions of the Phoenix Subdivision mining branchline. Although abandoned in 1921, we have re-activated this line to enhance the layout.
- Inclusion of a portion of the GN Nelson line which connected to the CPR at Troup – just east of Nelson.
- Inclusion of a connection with the GN at Grand Forks.

All of these will create more opportunities to move cars on and off the modelled portion of the layout and most existed during my chosen era.

9. Significant and extensive **visual aids** are very important for successful and enjoyable operating sessions in assisting the crew to understand all aspects of the layout and operating methodology. These will include; station names, east/west directional arrows, industry labels, layout schematic, timetables, station area industry plans, prototype photos, names for geographical features & structures, yard track numbering, etc. I always pay attention to how new guests operate the layout since a lot can be learned from their challenges, observations and mistakes. In addition, because the layout is heavily based on the prototype, visitors also seem to really appreciate the chance to see prototypical photos and other documents that have been used to design and construct the layout.

10. A key item for me was also to have the layout room basically finished when we moved in to the house. I didn't want to spend a year of time completing the room before actual layout construction could commence. So, we had this work completed before we moved in;
    1. Install a t-bar ceiling system. We elected to use t-bar to afford future access into the ceiling space.
    2. Install extensive multi circuit flouresant lighting throughout the room. The fixtures were placed based on the actual geometry of the physical layout footprint, and they all have extra long electrical whips on them in case we wanted to move them later.
    3. The room has a separate heating/cooling/ventilation zone with its own thermostat.
    4. In addition to all the lights and plugs installed by the contractor, we had them install a sub-panel into the room for future circuits.
    5. We chose to only seal the concrete floor with concrete paint at this time instead of installing a finished floor such as tile, carpet, etc. This is a personal choice for all layout owners. Due to the size of the room and the extent of construction required for the layout, we were concerned that any finished flooring would gets damaged during the first few years of work.
    6. The room has 2 exterior windows which provide natural light and ventilation, plus, one is an emergency exit as well.
    7. The 2 interior dividing walls in the train room were also built from steel studs and finished as well. They were done to the underside of the ceiling so they could be moved or modified in the future if necessary. My only mistake was I should have specified heavier gauge studs for the wall.