



The Importance of Landfill Master Planning - *Don't Keep Kicking the Can Down the Road*

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“Kicking the Can Down the Road”

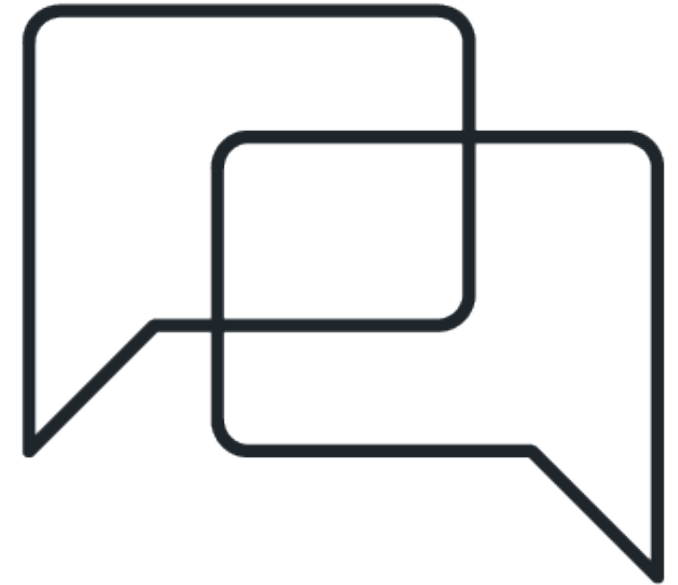
“That’s a problem for another day”

“Let’s just fix the current issue and worry about the rest later”

“That’s a problem for another day”

“We’re still decades off from closure, we’ll figure it out closer to then”

“I’ll be retired by the time we have to deal with that”





What is Master Planning?



What is Master Planning, Really?

- Webster Dictionary – Master Plan: a plan giving overall guidance
- Governor’s Office of Planning a Research - “A general plan is each local government’s blueprint for meeting the community’s long-term vision for the future.”





Preliminary Closure Plan

Title 27 § 21769 SWRCB (b)(2)

...At a minimum, the plan shall include:

*(A) **Cost Analysis** -a lump sum estimate of the cost of carrying out all actions necessary to close the Unit, to prepare detailed design specifications, to develop the final closure and post - closure maintenance plan, and to carry out the first thirty years of post -closure maintenance, pursuant to all applicable SWRCB -promulgated requirements of Subchapter 5 of Chapter 3 (§ 20950 et seq.); and*

*(B) **Map** -a topographic map, drawn at appropriate scale and contour interval, and drawn to an appropriate level of detail, showing....*





Preliminary Closure Plan

Title 27 § 21790 – CIWMB (b)(2)



(b) The plan shall identify the steps necessary to perform either partial final closure, in accordance with § 21120, or complete landfill closure and shall include, but is not limited to, the following information:

*(1) a **closure cost estimate** pursuant to §§ 21815 and 21820;*

*(2) **location maps** indicating property boundaries and the existing, permitted, and proposed final limits of waste placement; entry roads; and structures outside the property boundary but within 1000 feet of the property boundary. A location map shall also be included showing the general location of the landfill;*

(3) [Reserved];



Preliminary Closure Plan

What is Master Planning, really?



(4) a location map of the **current monitoring and control systems** including: leachate control and drainage and erosion control systems as required pursuant to chapter 3 (§ 20180 et seq.); landfill gas monitoring and control systems as required pursuant to chapter 3 (§ 20180 et seq.);

(5) a description of proposed **postclosure land uses**;

(6) an estimate of the **maximum extent of the landfill** that will ever require closure at any given time during the life of the landfill;

(7) an estimate of the **closure date** based on volumetric calculations, including supporting documentation. The estimate shall account for the effects of settlement and for volume occupied by daily cover material; and

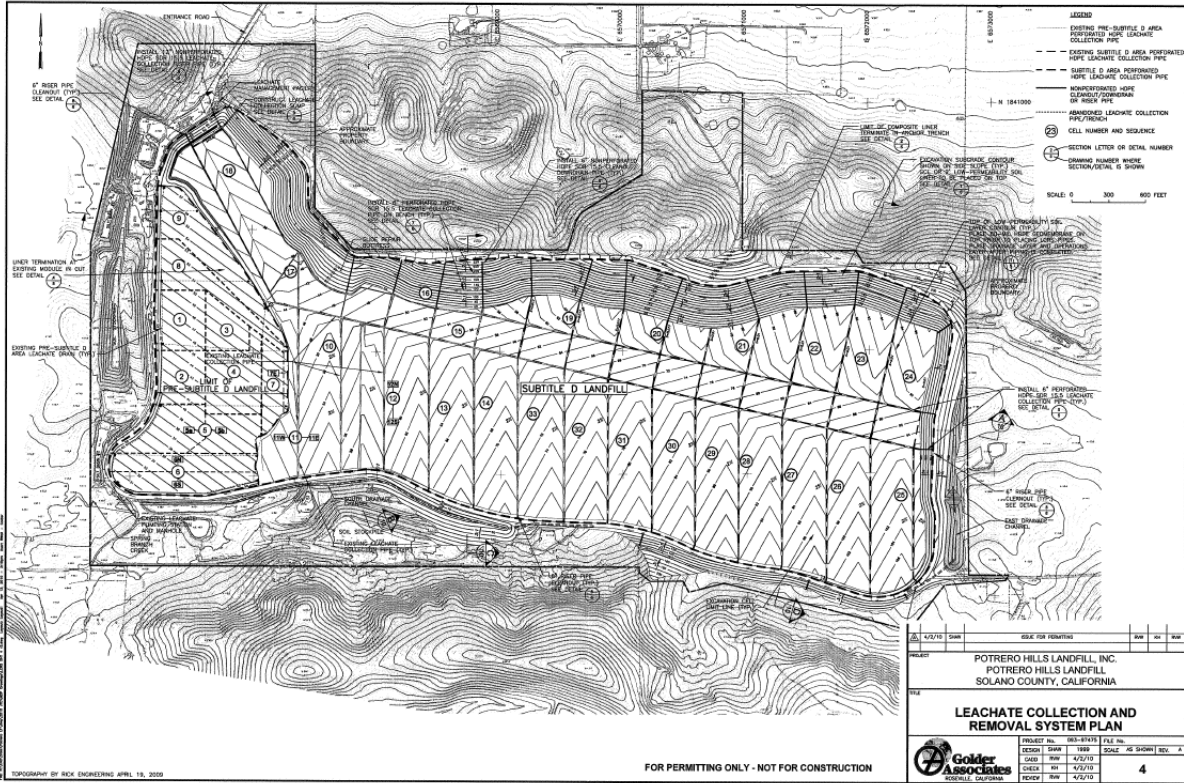
(8) a **preliminary description of closure activities** including schedules for implementation...

Construction Sequencing Plans

What is Master Planning, really?

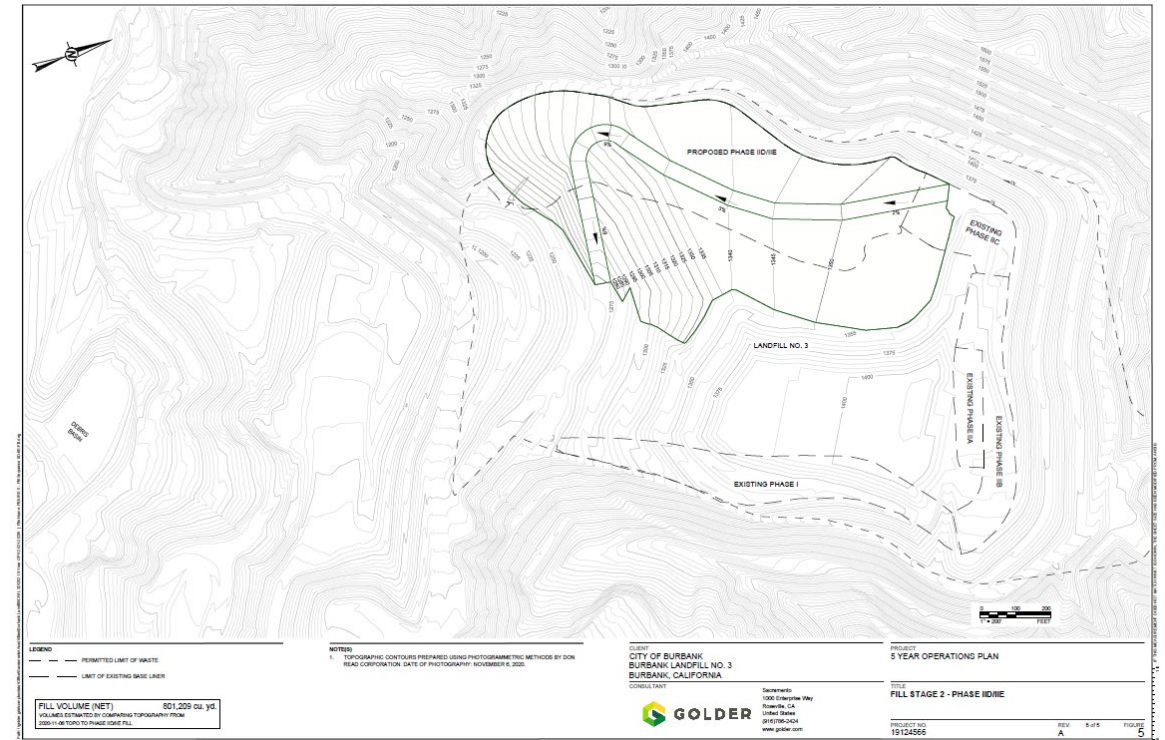
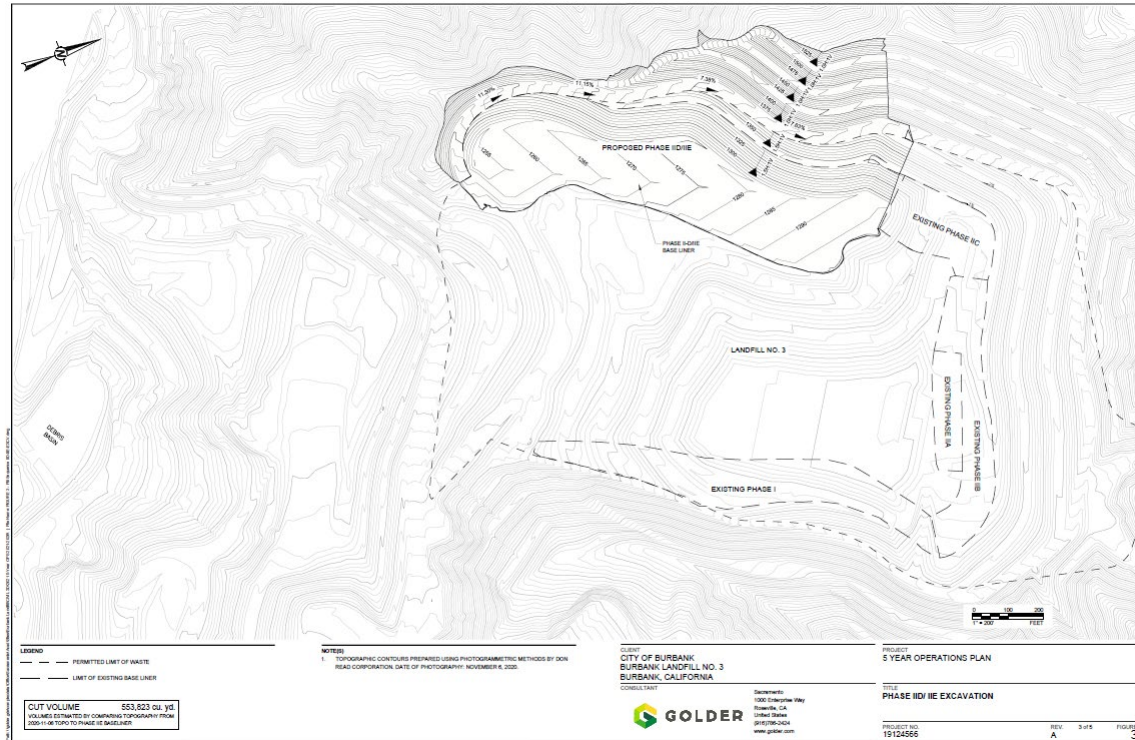
§ 21600 CIWMB (b)(4)(c)

Construction Sequencing Plans - **Describe** sequencing plans showing the anticipated phases of site development. A map showing the topographical contours prior to filling and the existing topographical contours of the permitted boundary.



Construction Sequencing Plans

What is Master Planning, really?





Components of a Master Plan



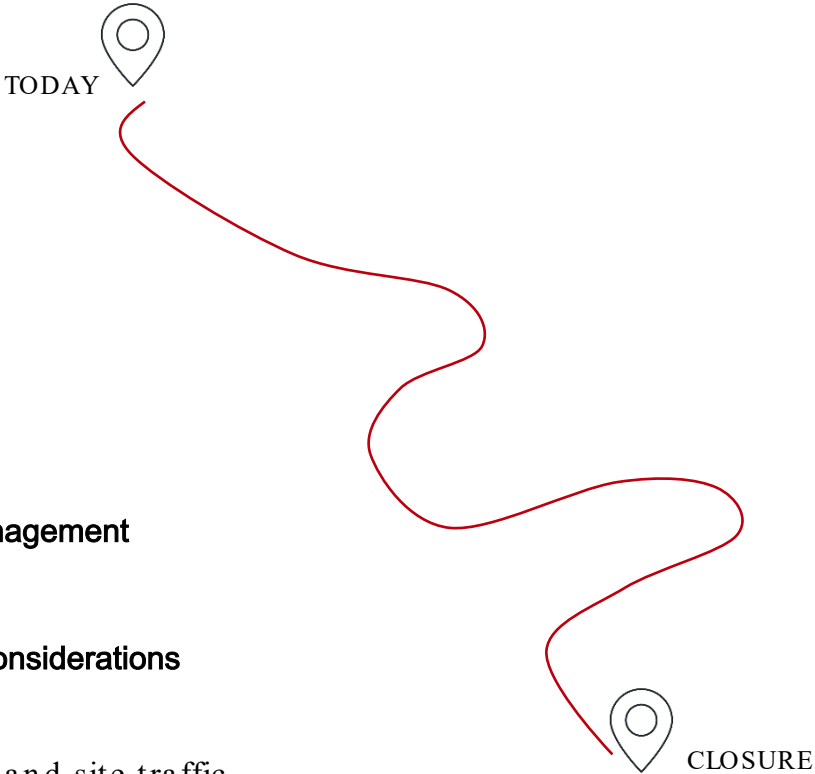
Landfill Master Plan

Components of a Master Plan

So what should you be included in a landfill master plan?

- 1 Technical review of existing closure plan
- 2 Review of current regulations and practice
- 3 Soil balance
- 4 **Fill planning**

- 5 Leachate management
- 6 Stormwater considerations
- 7 Access road and site traffic
- 8 LFG planning





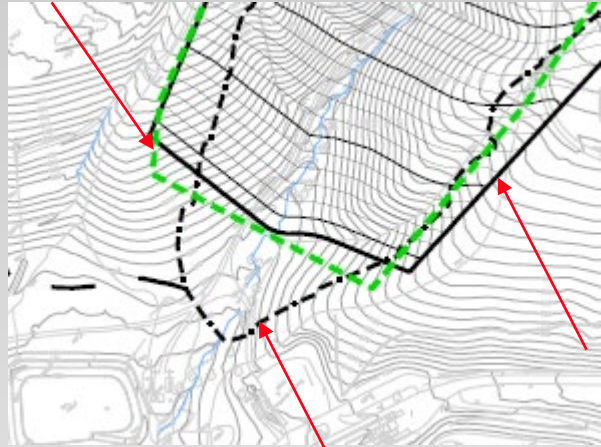
1. Closure Plan Technical Review

Components of a Master Plan

Questions to consider:

- Can it be built?
- Do the limits match?
- Do the access roads and benches align?
- Can you really capture all that airspace?
- Does it drain?
- Have we found waste outside our originally permitted limit?

2015 Limit of FGP



2004 Limit of FGP

1984 Permitted Limit



Canyon fill that doesn't drain



2. Review of Current Regulations & Practices

Components of a Master Plan

Questions to consider:

What regulations have changed?

What regulations do we anticipate in the future?

How has the state of the practice changed?

3. Soil Balance

Components of a Master Plan

Questions to consider:

- Too much or too little soil?
- Where to stockpile?
- Can we sell it?
- Do we need the soil later?
- Where can we get soil from ?
- Partial Closures





4. Fill Planning

Components of a Master Plan

Questions to consider:

Where are we filling next?

Is there infrastructure that needs to be moved?

How do we maintain access during each fill phase?

How does each phase tie into the final grading plans?

How should the environmental control systems be constructed?

How big of a cell do we need to construct for airspace efficiency?

Does the proposed fill plan maintain stability?

5. Leachate Management

Components of a Master Plan

Questions to consider:

- Will we be able to continue to offhaul to the POTW
- Do we need more storage? Do we have enough space?
- Continued leachate recirculation?
- What other technologies are available for leachate management?
- If we modify the final grading plan, will the existing LCRS have enough capacity?
- Should we consider partial closure?





6. Stormwater Considerations

Components of a Master Plan

Questions to consider:

Does my site currently drain?

Is the infrastructure in place consistent with the final grading plan?

Do we need more storage capacity?

Does my final grading plan drain where I want it to?



Conclusion



Why Master Planning Matters?

Conclusion

Cash flow

Reduces redesigns

Minimizes potential NOVs

Proactive regulatory environment

Alleviates turnover struggles

= SAVES MONEY



Thank you



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