Storm Drain Asset Condition Assessment Worksheet

A Working Tool for Tracking Age, Condition, Risk, and Capital Needs Across Storm Drainage Assets at Commercial, Industrial, Medical, Retail, Restaurant, Education, Religious, Multifamily, and Venue Properties in LA County, Orange County, San Diego County, and the Inland Empire

How to Use This Toolkit

This worksheet helps facility and property managers turn storm drainage from an unexamined background system into a managed asset. Use Part 1 to inventory every storm drainage asset. Use Part 2 to track age and remaining life. Use Part 3 to score condition and risk. Use Part 4 to build a capital forecast. Use Part 5 to organize the preventive calendar around the rainy season. Use Part 6 to log storm events. Use Part 7 to document the evidence behind your budget requests. Use Part 8 to map responsibility and contacts. Use Part 9 to review projects for drainage risk before they are approved.

Complete the inventory first. Everything else builds on it. Update the worksheet after every inspection, storm event, repair, and project, and review it fully once a year, ideally in September before the rainy season begins.
This worksheet is a planning tool. It does not replace an engineer's assessment, and it is not legal, insurance, or regulatory advice. Condition and capacity questions that affect safety or major capital decisions should be confirmed by a licensed civil engineer or other qualified professional.

PROPERTY INFORMATION

Field	Details
Property Name / Address	
Year Built / Years of Major Renovation	
Total Site Area / Approximate Paved Area	
Drainage Pattern	☐ Drains to public street ☐ Drains to private system then public ☐ On-site detention or infiltration ☐ Shared with neighboring parcels ☐ Unknown
Jurisdiction (City / County)	
Storm Drain Agency / Flood Control Contact	
Industrial or Construction Stormwater Permit Coverage	☐ Industrial permit ☐ Construction permit ☐ Neither ☐ Unsure - confirm with jurisdiction
Prior Flooding or Drainage Incidents	☐ None known ☐ One ☐ Multiple - describe: _____
As-Built Drainage Drawings Available	☐ Yes - current ☐ Yes - outdated ☐ No
Camera Inspection Baseline Completed	☐ Yes - date: _____ ☐ No
Person Responsible for This Worksheet	
Worksheet Start Date / Last Full Review	

PART 1: STORM DRAINAGE ASSET INVENTORY

List every asset that collects, conveys, treats, stores, or discharges stormwater at the property. If as-built drawings are missing, use walkthroughs, post-storm observations, and camera inspection to complete the list.

Asset Type Reference

Asset Type	Examples
Collection	Inlets, catch basins, trench drains, area drains, roof drains, scuppers, gutters, downspouts and leaders
Conveyance	Underground storm lines, laterals, manholes and junction boxes, cleanouts, culverts, swales, curbs and overland flow paths
Pumping	Sumps, sump pumps, lift stations, controls and alarms
Treatment and storage	Filters, separators, infiltration or detention areas, other on-site stormwater measures
Discharge	Outfalls, curb-face connections, connections to the public storm drain

Asset Inventory Log *(add rows as needed)*

Asset ID	Asset Type	Location / Description	Material	Size	Install Year (or Est.)	Serves (Building, Area, Use)	Ownership	Access	Last Inspected	Last Cleaned	Notes
			☐ PVC ☐ Concrete ☐ Clay ☐ Metal ☐ HDPE ☐ Unknown				☐ Private ☐ Shared ☐ Public ☐ Unknown	☐ Good ☐ Limited ☐ Blocked			
			☐ PVC ☐ Concrete ☐ Clay ☐ Metal ☐ HDPE ☐ Unknown				☐ Private ☐ Shared ☐ Public ☐ Unknown	☐ Good ☐ Limited ☐ Blocked			

Inventory Completeness Check

☐ Every roof drain and downspout connection identified and traced to where it discharges
☐ Every inlet, trench drain, and area drain located and numbered
☐ Underground storm lines traced from collection points to the property boundary or discharge point
☐ Point where private lines connect to shared or public lines identified and documented
☐ Sumps, pumps, and alarms identified, including backup power if installed
☐ Filters, separators, and other on-site stormwater measures identified
☐ Assets added during renovations or tenant improvements since the last review added to the log
☐ Assets with unknown material, age, or route flagged for camera inspection or engineer review

PART 2: AGE AND REMAINING LIFE TRACKER

Useful life varies widely with material, soil conditions, flow, installation quality, and maintenance history. Enter the useful life estimate provided by your engineer, the manufacturer, or a camera inspection report. Do not rely on a generic number for assets that carry significant consequence. (add rows as needed)

Asset ID	Install Year (or Est.)	Current Age	Estimated Useful Life	Source of Estimate	Percent of Life Used	Past 75% of Life	Prior Repairs	Notes
		years	years	☐ Engineer ☐ Manufacturer ☐ Camera report ☐ Other	%	☐ Yes ☐ No		
		years	years	☐ Engineer ☐ Manufacturer ☐ Camera report ☐ Other	%	☐ Yes ☐ No		

Percent of life used = current age divided by estimated useful life. Assets past 75 percent should be reviewed for capital planning in Part 4 even if their condition currently scores well.

Age-Related Flags - Review When:

☐ Install year is unknown and no inspection has been performed
☐ Asset is past 75 percent of estimated useful life
☐ Asset has required repair more than once in the past three years
☐ Asset material is no longer commonly installed and replacement parts are difficult to source
☐ Asset was installed before major changes to paving, buildings, or site grading that may have increased the load on it

PART 3: CONDITION AND RISK SCORING

Risk is the combination of how likely an asset is to fail and how much failure would cost the operation. Score condition, score consequence, and multiply.

Condition Rating Scale

Score	Rating	Description
1	Good	No defects observed. Flows freely. Structurally sound.
2	Fair	Minor wear, light debris or sediment, no structural concern.
3	Moderate	Visible defects such as moderate sediment, minor cracking, joint separation, light root intrusion, or recurring partial blockage.
4	Poor	Significant defects such as heavy root intrusion, major cracking, offsets, severe corrosion, or chronic blockage. Failure is likely within the planning period.
5	Failing	Collapse, severe deformation, active failure, or repeated overflow during storms.

Evidence for scoring may come from camera inspection, visual inspection, post-storm observation, service reports, or an engineer's assessment. Record which in the table below.

Consequence Rating Scale

Score	Rating	Description
1	Minimal	Landscape or low-use area. No structures or operations affected.
2	Minor	Surface ponding in parking or walkways with no effect on access or operations.
3	Moderate	Access, egress, customer areas, or tenant operations affected. Cleanup and short disruption.
4	Major	Water reaches building entries, below-grade spaces, loading areas, or critical equipment. Multiple tenants or units affected.
5	Severe	Occupied critical spaces affected, such as patient care, food preparation, residential units, classrooms, event operations, or areas with hazardous materials. Closure, relocation, or pollutant release possible.

Consequence Examples by Property Type

Property Type	Typical Score 4 to 5 Locations
Commercial office	Lobby entries, below-grade parking, electrical and IT rooms

Industrial	Production floors, chemical or material storage, loading docks
Medical	Patient care areas, imaging and equipment rooms, pharmacy and records storage
Retail	Customer entrances, stockrooms, receiving areas
Restaurant	Kitchen, food storage, dining room, walk-in coolers
Education	Classrooms, gymnasiums, cafeterias, safe student pathways
Religious	Sanctuary, fellowship hall, preschool or school spaces
Multifamily	Ground-floor units, garages, utility rooms, courtyards
Arena / venue	Concourses, loading and staging areas, mechanical and electrical rooms

Risk Score and Priority Tiers

Risk score = condition score x consequence score

Risk Score	Tier	Typical Response
1 to 5	Low	Maintain on routine schedule. Reassess annually.
6 to 10	Moderate	Monitor closely. Include in multi-year capital plan.
12 to 16	High	Budget for repair or replacement within one to two years. Increase inspection frequency.
20 to 25	Critical	Obtain engineer or qualified contractor assessment now. Plan immediate action or interim risk controls.

Worked Example

Asset	Condition	Consequence	Risk Score	Tier
Underground line beneath loading dock serving a clinic's receiving and storage area. Camera shows offset joints and heavy root intrusion.	4	5	20	Critical
Landscape area drain at the edge of a parking lot. Light sediment.	2	1	2	Low

Condition and Risk Scoring Log *(add rows as needed)*

Asset ID	Evidence Source	Date	Condition Score	Basis for Score	Consequence Score	Basis for Score	Risk Score	Tier	Recommended Action
	☐ Camera ☐ Visual ☐ Post-storm ☐ Engineer ☐ Service report							☐ Low ☐ Moderate ☐ High ☐ Critical	
	☐ Camera ☐ Visual ☐ Post-storm ☐ Engineer ☐ Service report							☐ Low ☐ Moderate ☐ High ☐ Critical	

Risk Summary

Tier	Number of Assets	Percentage of Inventory
Critical		%
High		%
Moderate		%

Low		%
Not yet scored		%

When Findings Call for More Than Maintenance

Finding	What It May Indicate	Suggested Next Step
Cracking, offsets, or collapse visible on camera	Structural failure in progress	Engineer or qualified contractor assessment. Repair, lining, or replacement belongs in the capital plan.
Root intrusion recurring at shorter intervals	Joint deterioration progressing	Assess pipe condition. Consider repair or lining to seal entry points.
Same inlet or area overflowing in multiple storms	Undersized capacity, blockage downstream, or changed site conditions	Engineer review of capacity and flow paths.
Heavy sediment or debris in a structurally sound line	Maintenance gap	Cleaning, then reinspection to confirm flow capacity is restored.
Ponding near building entries or below-grade spaces	Grading or collection deficiency	Engineer review. Consider interim protection for the next storm.
Unknown pipe route or material	Gap in asset knowledge	Camera inspection and mapping before any project work.

PART 4: CAPITAL FORECAST

Convert Critical and High items, and assets past 75 percent of useful life, into a phased capital plan. Coordinate with other planned work such as repaving, roofing, tenant improvements, and renovations so the same area is not opened twice.

Cost Classification Reference

Work Type	Typical Classification
Routine cleaning, inspection, camera inspection	Operating expense
Spot repairs	Operating or capital, per your accounting policy
Lining, replacement, new inlets or lines, capacity upgrades, pump replacement	Capital

Confirm classification with your finance team. Policies vary by organization.

Capital Project Forecast *(add rows as needed)*

Priority	Asset ID(s)	Risk Score / Tier	Recommended Scope	Estimated Cost	Target Year	Coordinate With	Funding Source	Engineer Input Needed	Status
			☐ Repair ☐ Line ☐ Replace ☐ Upgrade ☐ Add	$		☐ Repaving ☐ Roof ☐ TI ☐ Renovation ☐ None	☐ Capital ☐ Operating ☐ Reserve ☐ Owner funds	☐ Yes ☐ No	☐ Proposed ☐ Approved ☐ Scheduled ☐ Complete ☐ Deferred

			☐ Repair ☐ Line ☐ Replace ☐ Upgrade ☐ Add	$		☐ Repaving ☐ Roof ☐ TI ☐ Renovation ☐ None	☐ Capital ☐ Operating ☐ Reserve ☐ Owner funds	☐ Yes ☐ No	☐ Proposed ☐ Approved ☐ Scheduled ☐ Complete ☐ Deferred

Five-Year Capital Summary

Year	Number of Projects	Total Estimated Cost	Approved	Deferred	Notes
Current year		$	$	$	
Year 2		$	$	$	
Year 3		$	$	$	
Year 4		$	$	$	
Year 5		$	$	$	
Five-year total		**$**	**$**	**$**	

Deferral Review

When a project is deferred, document why and what interim risk controls are in place. Deferred Critical or High items should be reviewed every quarter. (add rows as needed)

Asset ID	Project	Date Deferred	Reason	Interim Risk Controls	Next Review Date	Decision Maker

PART 5: RAINY SEASON PREVENTIVE CALENDAR

Use this calendar to confirm that preparation and follow-up are scheduled and assigned. Task details should be defined in your service agreement or by your maintenance provider.

Timing	Activity Category	Scope Confirmed	Assigned To	Scheduled Date	Completed	Documentation Filed
September	Annual worksheet review and updated scoring	☐ Yes ☐ No			☐ Yes ☐ No	☐ Yes ☐ No
September to October	Pre-season preparation of collection points, roof drains, and downspout connections	☐ Yes ☐ No			☐ Yes ☐ No	☐ Yes ☐ No
September to October	Pre-season check of sumps, pumps, alarms, and any on-site stormwater measures	☐ Yes ☐ No			☐ Yes ☐ No	☐ Yes ☐ No
October	Camera inspection of lines scored High or Critical, or not yet inspected	☐ Yes ☐ No			☐ Yes ☐ No	☐ Yes ☐ No
Before first storm	Insurance coverage review with broker	☐ Yes ☐ No			☐ Yes ☐ No	☐ Yes ☐ No

After each significant storm	Walk-through for ponding, overflow, debris, and damage, with photos	☐ Yes ☐ No			☐ Yes ☐ No	☐ Yes ☐ No
Mid-season	Follow-up on items found after storms	☐ Yes ☐ No			☐ Yes ☐ No	☐ Yes ☐ No
End of season	Review of storm event log and score updates	☐ Yes ☐ No			☐ Yes ☐ No	☐ Yes ☐ No
End of season	Capital forecast update and budget submission	☐ Yes ☐ No			☐ Yes ☐ No	☐ Yes ☐ No

PART 6: STORM EVENT AND INCIDENT LOG

Record every significant storm and every drainage-related observation, including near misses. This log is the most persuasive evidence for budget requests because it shows patterns over time. (add rows as needed)

Date	Storm Description	Location / Asset ID	Observation	Duration	Water Reached Building or Occupied Area	Damage or Disruption	Photos Taken	Response	Cost	Follow-Up
	☐ Light ☐ Moderate ☐ Heavy ☐ Extreme		☐ Ponding ☐ Overflow ☐ Slow drainage ☐ Backup ☐ Erosion ☐ Debris ☐ Other		☐ Yes ☐ No		☐ Yes ☐ No		$	☐ Yes ☐ No
	☐ Light ☐ Moderate ☐ Heavy ☐ Extreme		☐ Ponding ☐ Overflow ☐ Slow drainage ☐ Backup ☐ Erosion ☐ Debris ☐ Other		☐ Yes ☐ No		☐ Yes ☐ No		$	☐ Yes ☐ No

Pattern Flags - Escalate for Review When:

☐ The same location shows ponding, overflow, or backup in two or more storms
☐ Water has reached a building entry, below-grade space, or occupied area even once
☐ Response costs are rising from season to season
☐ A near miss involved an asset scored High or Critical
☐ Observed problems began after a recent renovation, paving project, or tenant improvement
☐ A neighboring property, the public street, or a shared line appears involved

Season-by-Season Summary

Rainy Season	Significant Storms Logged	Incidents	Total Response and Repair Cost	Disruption (Days or Hours)	Claims Filed	Notes
Current			$			
Prior			$			
Two seasons prior			$			

PART 7: EVIDENCE AND BUSINESS CASE BUILDER

Complete one section for each project you plan to propose to ownership, a board, a lender, or an insurer.

Project Summary

Field	Details
Project / Asset ID(s)	
Risk Score and Tier	
Proposed Scope	
Estimated Cost of Planned Work	$
Proposed Timing	
Decision Maker / Approval Body	

Evidence Checklist

☐ Inventory entry with age, material, and location
☐ Camera inspection recording or report
☐ Condition and consequence scores with documented basis
☐ Storm event log entries showing repeated or serious observations
☐ Photos of ponding, overflow, debris, or damage
☐ Service reports showing cleaning frequency and findings
☐ Prior repair history and costs
☐ Engineer assessment or recommendation
☐ Correspondence with city, county, or flood control agency
☐ Claims or loss history related to drainage
☐ Insurer, lender, or inspector comments on drainage

Cost of Planned Work Compared With Cost of Failure

Cost Category	Planned Project	If the Asset Fails During a Storm
Engineering, permits, and design	$	$
Repair or replacement construction	$	$ (emergency rates, often with excavation under finished surfaces)
Emergency response	N/A	$
Water extraction, cleanup, and remediation	N/A	$
Damaged building components, contents, or inventory	N/A	$
Lost revenue, closure days, or canceled events	N/A	$
Tenant, resident, or customer relocation or concessions	N/A	$
Insurance deductible and possible premium effect	N/A	$
Staff and management time	$	$
Total	**$**	**$**

Estimate honestly. Use records from your incident log and past invoices wherever possible. A conservative, well-supported comparison is more persuasive than a dramatic one.

Summary Statement for Decision Makers

"Asset [ID] at [location] is rated [tier] with a risk score of [score]. The camera inspection on [date] found [finding]. Storm events on [dates] produced [observations]. Planned repair is estimated at $. ***A failure during a storm is estimated at $*** *in direct cost and [days or hours] of disruption to [operation]. We recommend approving the project in [year]."*

PART 8: RESPONSIBILITY AND CONTACT MAP

Ownership questions are easiest to settle before a loss. Document who is responsible for what and whom to call.

Ownership and Boundary Documentation

Item	Details
Point where private storm lines connect to shared or public lines	
Source of boundary information	☐ Agency record ☐ As-built drawing ☐ Survey ☐ Field observation ☐ Not yet confirmed
Shared drainage easements or agreements	☐ None ☐ Yes - location and document: _____
Neighboring parcels that drain onto this property	☐ None ☐ Yes - describe: _____
This property drains onto neighboring parcels	☐ No ☐ Yes - describe: _____
Lease language assigning drainage maintenance to tenants	☐ Not applicable ☐ Reviewed - clear ☐ Reviewed - unclear ☐ Not yet reviewed
HOA, owners association, or ownership group responsibilities	☐ Not applicable ☐ Documented ☐ Unclear

Contact List

Role	Name / Organization	Phone / Email	Last Confirmed
Civil engineer			
City or county public works / stormwater program			
Flood control agency (if applicable)			
Building and safety / permit office			
Primary drain and plumbing service provider			
After-hours emergency service			
Insurance broker			
Property owner or ownership representative			
Board or governing body contact (if applicable)			
Neighboring property managers (if shared drainage)			

PART 9: PROJECT DRAINAGE REVIEW CHECKLIST

Complete for every renovation, tenant improvement, addition, repaving, or new construction project before approval and again before closeout.

Field	Details
Project Name	
Scope Summary	
Reviewer	
Date of Review	

Plan Review Questions - Check Each

☐ Roof water: destination of new or relocated roof drains and downspouts confirmed, and the receiving line is sized for it
☐ Impervious area: increase in paving or building footprint quantified, and the destination of added runoff confirmed
☐ Grading: floor elevations, thresholds, ramps, and finished grades direct water away from buildings
☐ Below-grade spaces: entries, elevator pits, basements, and parking levels protected from ponding
☐ Loading docks and receiving areas: drainage and slope reviewed
☐ Trash enclosures, wash areas, and outdoor equipment pads: drain destinations confirmed and consistent with local rules
☐ Landscaping, planters, patios, and hardscape: flow directed away from structures
☐ Existing storm lines: project does not cross, cover, cut, or connect to them without engineer review and agency approval
☐ Inlets, cleanouts, and access points remain accessible after construction
☐ Operational sensitivity reviewed: outdoor dining, lower-level equipment rooms, event staging, generators, stored materials

☐ Permits identified for drainage modifications, and any stormwater requirements for construction or ongoing operations confirmed with the jurisdiction
☐ Engineer review obtained for projects that change grading, add significant paving, or alter drainage paths
☐ As-built drainage drawings requested at closeout and this worksheet's inventory updated

Review Outcome

☐ No drainage concerns identified
☐ Concerns identified and resolved - describe: _____
☐ Concerns outstanding - project approval on hold pending: _____