

Risk Management Plan for Tillamook County Road Department

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Risk Identification				Qualitative Risk Assessment				Management Plan						
#	Program	Risk Category	Failure Cause	Effect	Threat or Opportunity	Likelihood	Consequence	Risk Matrix	Response	Risk Contingency Response Plan	Residual Risk	Actions	Responsibility	Resources
1	Roads	Paved roads	Lack of timely maintenance Insufficient funding Poor design Wet climate/storm damage Poor drainage, utility work traffic loads, lack of enforcement, environmental regulations, inappropriate vehicle loading, vegetation impact, poor construction, inadequate contract supervision	Pot holes, shoulder deterioration, poor public image, base deterioration, overgrown vegetation, detracting from property value, increase maintenance cost, increased congestion, increase property damage, hurts industrial development & tourism, impacts public safety	Threat	4	4	<p>Likelihood</p> <p>Consequences</p>	Accept & Mitigate	Communicate reduced network condition in 5 years due to funding shortfall; Fill pot holes and pave based on road classification and available revenues; Transfer County roads to others as possible; Evaluate on case basis the cost/benefit of turning paved roads to gravel & consider speed signs	Risk remains.	1.1 Report to board on risk and funding need. 1.2 Implement program given funds available 1.3 Target Pavement Management Strategies to Mix of Fixes	TCPW Director	1.1 TCPW Director 1.2 TCPW Director & foremen & contract inspection 1.3 TCPW Director
2	Roads	Gravel roads	Lack of maintenance; Poor design; Wet climate; Poor drainage; Poor rock quality processing; Public assists but with poor steep slopes.	pot holes, shoulder deterioration, poor public image, base deterioration, overgrown vegetation, detracting from property value, increase maintenance cost, increased congestion, increase property damage, hurts industrial development & tourism	Threat	4	2	<p>Likelihood</p> <p>Consequences</p>	Mitigate	Grade gravel roads; Focus on higher volume roads with more residents; Transfer jurisdiction to other agencies; Consider no maintenance & signing "Limited maintenance"	Risk remains.	2.1 Define gravel road priority based on connectivity and emergency routing. 2.2 Identify roads to transfer to other jurisdictions based on above. 2.3 Review/approve Board to transfer to partner based on above. 2.4 Proceed as possible based on available resources.	TCPW Director	2.1 TCPW Director; 2.2 TCPW Director & foremen & contract inspection
3	Structures	Bridges	Condition deteriorates to point of asset failure under normal traffic loading; Lifeline failure during natural disaster event or restricted use; Restrictions on load/dimensions of use, scour; Wet climate; Age; Material deterioration; Tide/salt/environmental impacts	Loss of life; Isolation of people; Liability, emergency response/life safety due to detours; Maintenance costs; Economic impact; Lack of accessibility, detours; County-wide, utility & intrastate communication lines interrupted; Failure of bridge shifts traffic to bridges and roadways	Threat	2	5	<p>Likelihood</p> <p>Consequences</p>	Mitigate	Consider abandoning or transfer bridges; Pursue federal and state money for bridges in poor condition; Inspect and post weight limits; Manage life line routes; Post poor bridges; Inform public of alternate routes; Implement 10-year Strategic Bridge Plan	Risk remains if funding not found to address bridges in poor condition or load limit signs are ignored or another major storm causes river channel change	3.1 Conduct every other year inspection; 3.2 Post weight limited bridges; 3.3 Notify industry of routes with posted bridges	Director	3.1 Bridge testing consultant; 3.2 Train staff 3.3 TCPWD Director
4	Structures	Guardrails	Condition deteriorates to point of asset failure; Asset fails during natural disaster; Asset fails due to failure of roadside slope Guardrail failure caused by poor design, landslide and vehicle impact, storm damage; Traffic accidents; Material failure (posts); Age	Guard rails sunk below road; More serious injuries; Fatalities, negative image; Safety & liability impacts	Threat	3	2	<p>Likelihood</p> <p>Consequences</p>	Accept	Replace dangerous guardrails	Risk remains.	4.1 Remove guardrail in poor condition with paving and bridge approach projects.	Road Foreman	4.1 Road Foreman

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5	Structures	Levees	Natural disaster (wind/rain, flooding, erosion) causes erosion and embankment failure and flooding	major flooding, economic impacts, fatalities, property damage, road closure	Threat	2	4	<p>Likelihood</p> <p>Consequences</p>	Mitigate	Inspect levees, repair within budget capabilities Look for hazard mitigation funds Access past inspection reports and develop annual inspection program Develop funding partnerships, and seek disaster prevention funds	Low when action plan done.	5.1 Develop inspection methodology and program. 5.2 Institute practice of inspecting prior to and following storm events. 5.3 Complete Emergency Access Plan. 5.4 Report to board on program needs.	TCPW Engineering staff with Core of Engineers, and foremen and Director	5.1 Engineering staff 5.2 Foremen 5.3 Eng. Staff 5.4 TCPW Director
6	Drainage	Culverts	Outdated inventory & condition assessment Lack of mapped culverts Low lying roads inundated by plugged or deteriorated culverts; Inappropriately sized outfalls beavers, undersized culverts, storm water	road washouts, flood property, road closures, traffic delays, property damage, emergency response issues, ecological impacts, negative impact on road integrity	Threat	5	4	<p>Likelihood</p> <p>Consequences</p>	Mitigate	Inventory and locate assets, inspect, rate condition. Develop preventive maintenance and replacement program; Seek opportunities with funding partners to target culverts with fish passage significance in need of repair or replacement	Reduced when plan done.	6.1 Develop inventory & planned inspection and cleaning program 6.2 Reduce or replace failed culverts as funding allows 6.3 Report to board on program costs & needs.	TCPW Director & foremen	6.1 Director and consulting services & foremen 6.2 Director with funding partners
7	Drainage	Ditches and Shoulders	No inventory or condition assessment Eliminated ditching crew over 20 years ago, vegetation up to road	road washouts, flood property, road closures, traffic delays, property damage, emergency response issues, ecological impacts, negative impact on road integrity, premature road deterioration, shoulder buildup of debris	Threat	5	4	<p>Likelihood</p> <p>Consequences</p>	Mitigate	Develop inventory and location of ditches; inspect, rate condition as a part of 2018 pavement rating contract	Risk remains. Reduced when funds and staff are available to develop proactive ditching program.	7.1 Develop inventory & planned inspection and cleaning program as budget allows; 7.2 Incorporate inventory and condition assessment in 2018 pavement contract; 7.3 Report to board on program costs & needs.	TCPW Director & foremen	7.1 Director and consulting services & foremen; 7.2 Administrative specialist & director review; 7.3 Director
8	Veg.Mgmt	Spraying & Mowing	Lack of sight distance Obstructs traffic signs Vegetation grows through pavement	builds shoulders, accidents, loss of sight distance, road deterioration, property damage, user costs, complaint volume increase; appearance not aesthetically pleasing; reactive maintenance, correcting problems after they occur; backlog of deficiencies; safety problems; higher costs when done irregularly	Threat & Opportunity	5	3	<p>Likelihood</p> <p>Consequences</p>	Accept & Mitigate	Increase awareness of staffing need; Continue to make a High priority for available funding.	Short term increased risk until public notified	8.1 Spray vegetation and report in accordance with DOA. 8.2 Mow vegetation as budget allows.	Staff and Director; Board approval required	8.1 Director & Foremen 8.2 Director & Foreman

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9	Traffic Safety	Signs-Regulatory (red/white, e.g. stop signs or yellow/black, e.g., yield signs)	Loss of signs in key locations; Condition (reflectivity) falls below threshold; Vandalism or graffiti; Posts knocked over from storm age deterioration	Increased accidents, complaints; possible fatality; speeding; overtime costs due to reactive maintenance	Threat	1	2	<p>Likelihood</p> <p>Consequences</p>	Avoid	Continue regulatory sign maintenance	Low risk when plan executed/	9.1 Continue sign maintenance program on regulatory signs only 9.2 Report sign need based on inspection	Foremen	9.1 Foremen 9.2 Sign technician
10	Traffic Safety	Signs-Other	Loss or lack of sign in key locations; Condition falls below threshold; Vandalism or graffiti; Posts knocked over from storm	Increased emergency response for down and vandalized signs; Increased citizen complaints; Increased overtime costs due to reactive maintenance	Threat	4	2	<p>Likelihood</p> <p>Consequences</p>	Accept	No overtime response for requests to replace non-regulatory signs down	Risk remains	10.1 Communicate decision to defer non-regulatory sign maintenance & overtime	Director & foremen	10.1 Director & sign technician
11	Traffic Safety	Pavement markings	Markings not replaced annually Poor or no visible markings	Accidents	Threat	1	2	<p>Likelihood</p> <p>Consequences</p>	Avoid	Maintain annual pavement marking contract using Marion County services	Low risk when markings replaced annually.	11.1 Manage annual pavement marking contract;	Administrative Specialist & Director	11.1 Administration Specialist initiates and manages contract costs; 11.2 Director monitors budget impact
12	Equipment	Fleet & Equipment	Inadequate preventive maintenance; Vehicles exceed useful life/ performance; Vehicles outdated or unsafe for job	Accidents; Time loss at work; Increased reactive repairs and costs	Threat	4	4	<p>Likelihood</p> <p>Consequences</p>	Mitigate	Reduce fleet by auctioning underutilized vehicles and equipment; Prioritize needs and work with partners to purchase used, critical vehicles and equipment; Monitor Level 1 (preventive maintenance) ; increase field employees so Shop Foreman can focus on fleet services	Risk remains until staff is increased and older, and failing vehicles and equipment replaced	12.1 Continue tracking time and hours of performance & maintenance cost per vehicle; 12.2 Auction underutilized and high cost vehicles and equipment; 12.3 Acquire used, critical fleet; 12.4 Report on need	TCPW Director & Shop Foreman	12.1 Shop foreman; 12.2 & 12.3 Shop Foreman and Administrative Specialist; 12.4 Shop Foreman and Director

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13	Facilities	Maintenance Yards	Buildings not to code Buildings functionally inadequate Buildings in poor condition	Worker safety; Poor employee morale; Costly reactive maintenance; Loss of investment	Threat	4	3	<p>Likelihood</p> <p>Consequences</p>	Mitigate	Annual inspection program. Update inspection and condition rating; Provide critical maintenance and repair	Risk remains	13.1 Conduct annual inspection of buildings; 13.2 Provide critical building maintenance and repairs as budget allows; 13.3 Report on need	County staff & TCPWD Director	13.1 & 13.2 Admin. Specialist hires building inspector to update condition and perform repairs; 13.3 TCPW Director
14	Materials Mgmt.	Quarries	Inadequate crushed rock Threat of selling quarries	Buy more costly materials that don't meet job needs Slower delivery of materials	Threat	4	2	<p>Likelihood</p> <p>Consequences</p>	Mitigate	Develop Quarry Development Plan; crush rock and organize quarries	Lowers risk when plan executed & quarries retained.	14.1 Maintain quarries and provide high quality and efficiently organized quarry materials for County road jobs. 14.2 Modify DOGMI Permit	TCPW Director	14.1 Foremen; 14.2 Director
15	Engineering	Engineering Staff	Staff inadequate for volume of permits and capital projects; Qualified staff resigns or retires	Slow permit review; Threat that mandated review cycle not met; Higher costs to developers, utilities and citizens; Poor morale; Accelerated employee turnover and loss of corporate knowledge	Threat	5	2	<p>Likelihood</p> <p>Consequences</p>	Mitigate	Delegate more capital project management from Director to Engineering staff	Risk remains until additional staff hired	15.1 Manage efficiency of engineering staff; 15.2 Report to Board and identify if revenues can be used to hire additional staff	Eng. Staff and Director	15.1 Engineering staff & Director; 15.2 TCPW Director
16	Admin. Services	Department Employees	Inadequate staffing; Inadequate compensation; Inadequate technical training; Insufficient funding to hire, train employees	Poor employee morale; Poor public image; Slower response to public requests for service; Accelerated employee turnover & loss of corporate knowledge	Threat	5	5	<p>Likelihood</p> <p>Consequences</p>	Mitigate	Develop a succession plan; hire more staff; revise compensation plan	Risk remains	16.1 Conduct risk workshop to set priorities; 16.2 Communicate need; 16.3 Continue performance reviews & ensure market rate compensation for staff	TCPW Director & County Board	16.1-3 TCPW Director & County Board
17	Emrgcy. Mgmt.	Roads Bridges Culverts Ditches Signs Levees Department Employees	Natural disasters; Extreme weather events; Failed roads, bridges, drainage systems and levees	Closed routes for emergency services; Increased demands and risk to private property and life; Flooding due to failed levees or culverts or flooded roads	Threat	4	5	<p>Likelihood</p> <p>Consequences</p>	Mitigate	Focus on Extreme and High risk services (see above)	Risk remains	17.1 Participate in emergency drills 17.2 Further coordinate with Umatilla County as a Sister Community 17.3 Develop Emergency Response Plan; 17.4 Ensure TCPWD staff have emergency plans for families.	TCPW Director	17.1 -4 Director and staff