

November 21<sup>st</sup>, 2022,

# 2022 PAVEMENT CONDITION REPORT

Breezy Point, MN



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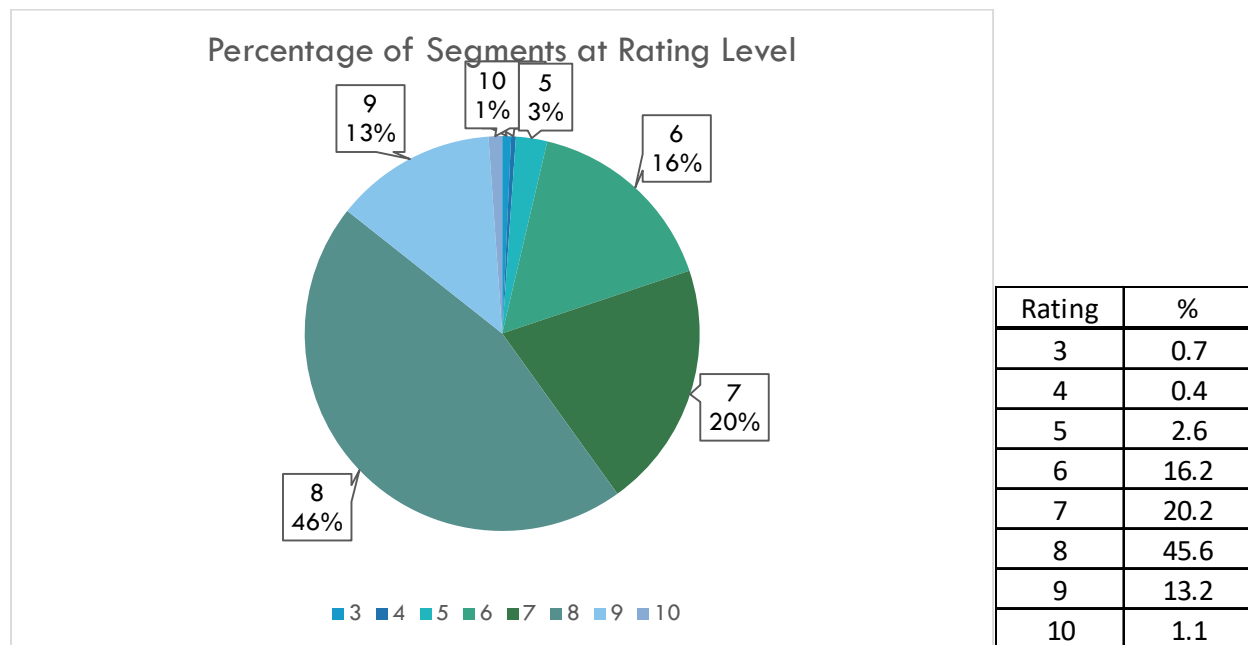
## Summary

Attached are the pavement inspection results of the road segments in Breezy Point performed by WSB & Associates and completed in October of 2022.

The Paser Manual for Asphalt Roads, developed by the Wisconsin DOT, was utilized as the inspection system to visually rate pavement conditions. This allows WSB staff to quickly perform windshield survey and an initial pavement evaluation for the City of Breezy Point. This information, along with the information collected in 2020 report collected by WiDSETH, can later be related to more detailed pavement evaluation that could be used to model city streets and create a 5-year capital improvement plan. WSB does not rate gravel roads because their surface condition can fluctuate dramatically depending on several factors like weather, time of year, and how often they are graded or maintained. In general, establishing a routine maintenance schedule for gravel roads is the key to maintaining gravel roads to a publicly accepted standard.

A summary of the pavement condition report is listed below:

- Approximately 43 miles of paved City streets were evaluated in Breezy Point.
- The current weighted average Pavement Condition Index (PCI) for bituminous roads in Breezy Point is 7.4. PCI is based on a 0 to 10 scale, with higher PCI values corresponding to better road conditions. This weighted average is calculated from the PCI values generated on each segment of roadway. A road's PCI is based on the quantity and severity of pavement distresses identified in the field.



**Figure I.1.** Percent of System in Each Pavement Condition Category.

## Rating system

<i>Surface rating</i>	<i>Visible distress*</i>	<i>General condition/ treatment measures</i>
<b>10</b> Excellent	None.	New construction.
<b>9</b> Excellent	None.	Recent overlay. Like new.
<b>8</b> Very Good	No longitudinal cracks except reflection of paving joints. Occasional transverse cracks, widely spaced (40' or greater). All cracks sealed or tight (open less than 1/4").	Recent sealcoat or new cold mix. Little or no maintenance required.
<b>7</b> Good	Very slight or no raveling, surface shows some traffic wear. Longitudinal cracks (open 1/4") due to reflection or paving joints. Transverse cracks (open 1/4") spaced 10' or more apart, little or slight crack raveling. No patching or very few patches in excellent condition.	First signs of aging. Maintain with routine crack filling.
<b>6</b> Good	Slight raveling (loss of fines) and traffic wear. Longitudinal cracks (open 1/4"–1/2"). Transverse cracks (open 1/4"–1/2"), some spaced less than 10'. First sign of block cracking. Slight to moderate flushing or polishing. Occasional patching in good condition.	Shows signs of aging. Sound structural condition. Could extend life with sealcoat.
<b>5</b> Fair	Moderate to severe raveling (loss of fine and coarse aggregate). Longitudinal and transverse cracks (open 1/2" or more) show first signs of slight raveling and secondary cracks. First signs of longitudinal cracks near pavement edge. Block cracking up to 50% of surface. Extensive to severe flushing or polishing. Some patching or edge wedging in good condition.	Surface aging. Sound structural condition. Needs sealcoat or thin non-structural overlay (less than 2")
<b>4</b> Fair	Severe surface raveling. Multiple longitudinal and transverse cracking with slight raveling. Longitudinal cracking in wheel path. Block cracking (over 50% of surface). Patching in fair condition. Slight rutting or distortions (1/2" deep or less).	Significant aging and first signs of need for strengthening. Would benefit from a structural overlay (2" or more).
<b>3</b> Poor	Closely spaced longitudinal and transverse cracks often showing raveling and crack erosion. Severe block cracking. Some alligator cracking (less than 25% of surface). Patches in fair to poor condition. Moderate rutting or distortion (greater than 1/2" but less than 2" deep). Occasional potholes.	Needs patching and repair prior to major overlay. Milling and removal of deterioration extends the life of overlay.
<b>2</b> Very Poor	Alligator cracking (over 25% of surface). Severe rutting or distortions (2" or more deep). Extensive patching in poor condition. Potholes.	Severe deterioration. Needs reconstruction with extensive base repair. Pulverization of old pavement is effective.
<b>1</b> Failed	Severe distress with extensive loss of surface integrity.	Failed. Needs total reconstruction.

\* Individual pavements will not have all of the types of distress listed for any particular rating. They may have only one or two types.

## Conclusion

Upon completion of the visual assessment of the pavements within the City of Breezy Point, it can be determined that the pavements are in good condition and comparable to what is seen in communities of a similar size and budget as the City of Breezy Point.

The City is in a unique position with very favorable subgrade materials. Subgrade issues are one of the largest contributing factors to premature pavement distresses and failures. These favorable subgrade conditions indicate that the City should prioritize investing in preservation of the existing bituminous surfaces for as long as possible with intentional and timely pavement maintenance practices (crack sealing, seal coating, microsurfacing, etc.). During the inspection, there was observed evidence of crack sealing and chip seal operations throughout the city showing that preventative maintenance is already taking place. The City should look to continue these maintenance practices while also looking at other pavement maintenance or rehabilitation techniques to supplement its current program.

WSB's Baxter staff have extensive experience developing pavement management plans, optimizing current management practices, and creating data backed efficient capital investment plans. We have provided this service to over 50 communities just within Minnesota and clients ranging from DOT's to townships. Based on the information obtained in windshield rating process, WSB would like to continue these analyses with the City of Breezy Point and how future preventative maintenance techniques are used and how often or where to use specific techniques.

Given the current condition of the City's pavement system and management techniques currently being used, it is safe to assume that this would be a prime time for the City to consider expansion of the paved roadway system. Based on growth within the City, this would also be an opportune time for the City to consider expansion of their wastewater system to serve un-served areas of the community. As the pavement system expands it is even more important to have an investment plan to ensure the current level of service can be maintained.

If the City hasn't already created a detailed 5-year street and sewer capital improvement plan, we suggest this as next step. WSB manages a variety of systems that help City's track their assets, analyze life cycles, and plan projects for a 5–10-year Capital Improvement Plan (CIP). By having these tools in place communities can evaluate all their assets along a particular corridor at once and make more informed decisions and plan further out with the City's budget. We would suggest starting with the following and developing them up to whatever level the City is comfortable with for planning:

- Asset risk assessment exercise - Build and analyze network-level lifecycles, data, and unit costs, and begin to strategize an optimal approach for managing multiple assets
- Develop a risk register - unpack risks to the agency and assets specifically. These are both quantitative and qualitative. Risk registers include risk ratings, mitigation strategies, and prioritization.
- Develop a GIS based asset management tool – Catalog and map all assets so that they are georeferenced. Allowing staff to collect data in the field and seamless access the data in the office. This tool allows all assets to be visualized and have associated data to allow decisions to be made that account for the City's complete system. Additionally, data can easily be pulled and presented in map form.

## References

**Project Name: Minnetrista Pavement Management Plan and Capital Improvement Plan****Project Location: Minnetrista, MN****Project Manager: Matt Indihar, PE****Project Timeline: April-October of 2021****Description:**

*During the summer of 2021, WSB provided several pavement management services to the city of Minnetrista. The city's database of street segments was updated to include new segments and any maintenance projects that took place since their pavement was last inspected in the PAVER software. WSB then performed detailed visual distress surveys on over 50 miles of paved city roads. The distresses found on each segment were documented and a Pavement Condition Index (PCI) was calculated for each segment. WSB worked with the city to develop different budget scenarios and modeled how the pavement conditions in Minnetrista would be affected by different maintenance strategies. WSB then created a pavement management plan to optimize the city's budget. An updated pavement condition map and 5-year capital improvement plan were provided to city officials. These documents along with a recommended maintenance schedule will help city officials implement the most cost-effective pavement maintenance strategies in the future.*

**Project Name: Chanhassen Pavement Management Services****Project Location: Chanhassen, MN****Project Manager: Matt Indihar, PE****Project Timeline: Yearly****Description:**

*WSB worked with Chanhassen to continue implementing their Pavement Management System. Each year WSB inspects 1/3 of the city's pavement and updates the city's pavement management database using the Cartegraph OMS software. In 2022, WSB provided pavement inspections on 40 miles of city streets, 37 miles of trails, and 28 parking lots. These visual surveys included documenting the distresses in the pavement to assign each segment an Overall Condition Index (OCI). A summary of pavement conditions was provided to city officials. This report included the results from the yearly inspections and estimated the current OCI using the United States Army Corps of Engineers pavement deterioration formula for all pavement that wasn't inspected. This information allows Chanhassen to implement their preferred pavement management strategy and monitor the condition of all the city's pavement.*

**Project Name: Sunfish Lake Pavement and Culvert Inspections****Project Location: Sunfish Lake, MN****Project Manager: Matt Indihar, PE****Project Timeline: June-July of 2021****Description:**

*WSB inspected all the city road pavement in the city of Sunfish Lake in the summer of 2021. The pavement surveys included visually inspecting each segment, recording the specific distresses observed, and entering the data into the PAVER program to determine the Pavement*

*Condition Index (PCI) of the roads. Additionally, WSB performed 50 culvert inspections that included documenting the condition and functionality of the structures. Proper drainage is crucial to achieve long lasting pavement which is why the culvert data is so important. GIS maps indicating the pavement and culvert conditions were provided along with a report summarizing condition trends. This data will help the city make decisions on pavement and culvert maintenance over the next few years.*

**Project Name: Champlin Trail and Parking Lot Pavement Inspections**

**Project Location: Champlin, MN**

**Project Manager: Matt Indihar, PE**

**Project Timeline: July-August of 2021**

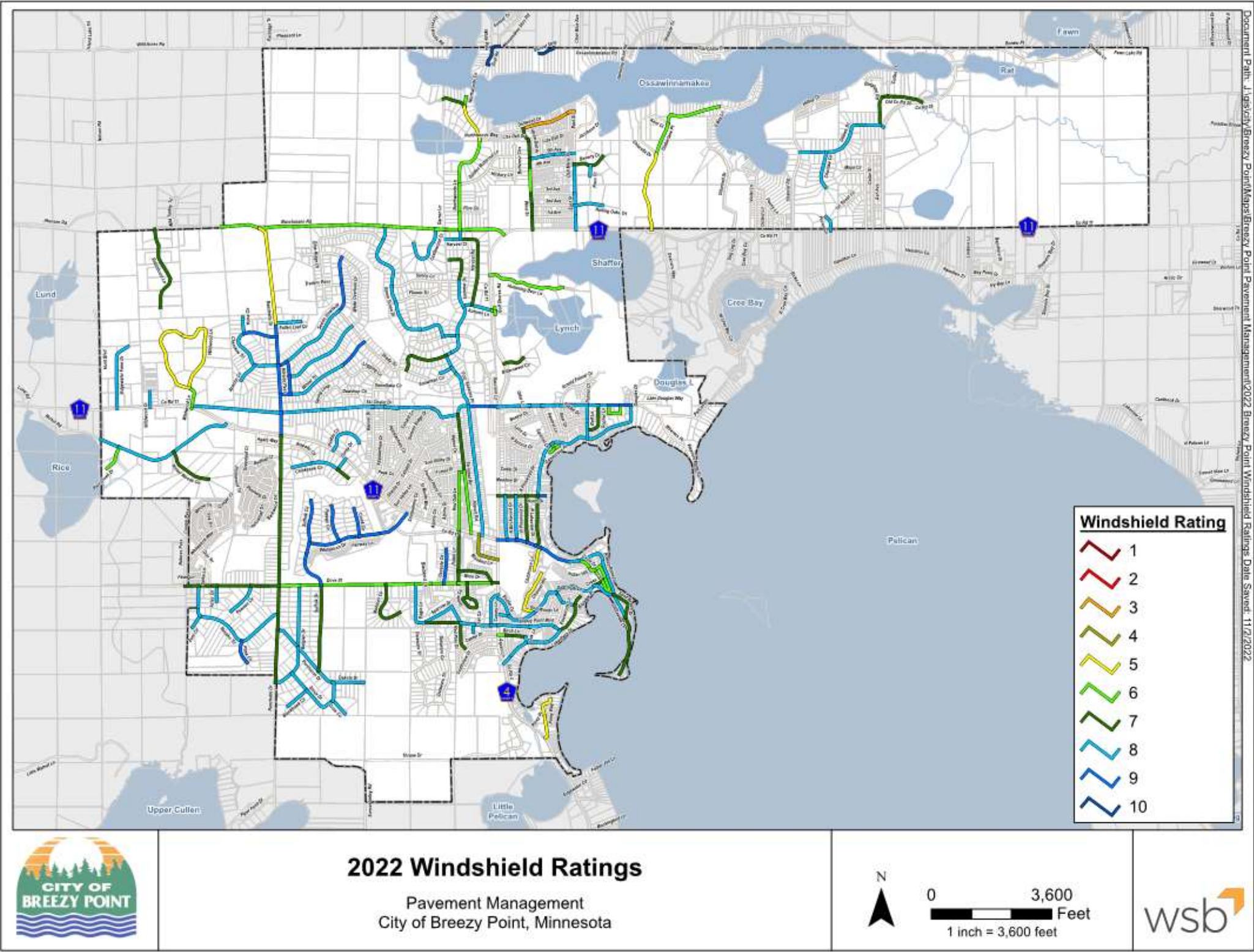
**Description:**

*Pavement management extends beyond just roads. In 2021, WSB worked with the City of Champlin to analyze their trails and parking lots. WSB visually inspected 10 miles of trails and 10.5 acres of parking lots. The pavement was all visually inspected, and the types of distresses found were analyzed to determine the condition of each segment. WSB also projected the condition of each parking lot 5, 10, and 15 years from the date of inspection using the United States Army Corps of Engineers formula. The information was summarized with reports and GIS maps. These documents will help guide Champlin as they decide how to manage the city's pavement.*

# Appendices



Appendix A: PCI Maps



## Appendix B: Surface Ratings by Segment

SECTION ID	FULL_NAME	Surface Rating	Notes
8	5th Ave	8	previous chip seal cracks sealed
9	5th Ave	8	previous chip seal cracks sealed
10	5th Ave	8	previous chip seal cracks sealed
11	5th Ave	8	previous chip seal cracks sealed
117	Airport Rd	8	some l and t chip sealed
68	Apache Cir	8	chip seal
75	Autumn Ln	8	chip
76	Autumn Ln	8	one patch
149	Aztec Cir	8	chip seal
175	Bayview Pl	7	pothole
152	Belgian Dr	8	chip seal some transverse
155	Belgian Dr	8	chip seal
158	Belgian Dr	8	chip seal
252	Beverly Dr	7	transverse cracks sealed edge cracked
253	Beverly Dr	7	transverse cracks sealed edge cracked
190	Birch Ln	6	weathered raveling
191	Birch Ln	7	edge raveling
193	Birch Ln	8	weathered few cracks
211	Bittersweet Cir	7	chip sealed cracks
160	Blackhawk Cir	8	chip seal
126	Bluebird Ln	4	old alligator cracking and lots of patches
185	Breezy Point Blvd	8	weathered
186	Breezy Point Blvd	8	weathered
187	Breezy Point Blvd	8	weathered
119	Breezy Point Dr	9	newer
121	Breezy Point Dr	9	newer
123	Breezy Point Dr	9	new few cracks
125	Breezy Point Dr	9	new few cracks
127	Breezy Point Dr	9	limited cracking
136	Breezy Point Dr	8	weathered l and t with patches
171	Breezy Point Dr	8	weathered some l and t
173	Breezy Point Dr	8	weather few l and t
177	Breezy Point Dr	8	weather few l and t
179	Breezy Point Dr	8	weathered
181	Breezy Point Dr	8	weathered
217	Breezy Point Dr	9	weathered

273	Breezy Point Dr	8	additional cracks
3	Buschmann Rd	6	weathered edge drop off alligator
22	Buschmann Rd	6	weathered edge cracked
61	Buschmann Rd	6	edge cracking patches block cracking
62	Buschmann Rd	6	weathered l&t cracking
86	Buschmann Rd	6	weathered some larger cracks and edge cracking
274	Buschmann Rd	6	edge cracking
216	Camp Lora Pl	6	Weathered and L&T
218	Camp Lora Pl	6	Weathered and L&T
182	Canary Ln	8	chip sealed minor cracking
234	Castlewood Ct	8	cracks sealed
133	Channel Hts	5	bumps and sags. several cracks and alligator
65	Cherokee Trl	8	chip sealed cracks pavement sag
67	Cherokee Trl	8	chip seal cracks seal
260	Cherokee Trl	9	chip seal minor cracks
90	Chickasaw Cir	8	chip sealed few cracks
92	Chickasaw Cir	8	transverse cracks
228	Chickasaw Cir	7	block cracking threw chip seal
34	Choctaw Cir	8	chip sealed and transverse cracks
134	Circle Dr	6	larger cracks weathered patches
219	Circle Dr	6	larger cracks weathered patches
220	Circle Dr	6	bumps weathered cracks
221	Circle Dr	6	bumps weathered cracks
222	Circle Dr	6	weathered and moderate cracks
214	Clubhouse Ln	5	potholes alligator and block cracking weather
93	Creek Cir	9	chip seal
135	Cross St	6	patches weathered
170	Cross St	7	patches weathered
162	Crow Cir	8	chip sealed
157	Dakota Dr	8	few cracks
6	Dellwood Dr	3	alligator and raveling
243	Dellwood Dr	3	alligator and raveling
94	Dove St	6	block cracking weathered edge cracks
95	Dove St	6	weathered edge cracks block patch
96	Dove St	6	weathered edge cracks block patch
97	Dove St	6	weathered edge cracks block patch
130	Dove St	6	weathered edge cracks block patch
132	Dove St	6	patches
163	Dove St	6	weathered bumps transverse

167	Dove St	6	block cracking
169	Dove St	7	chip sealed
213	Dove St	6	block cracking
261	Dove St	7	chip sealed
262	Dove St	7	chip sealed
265	Dove St	7	chip sealed
266	Dove St	7	chip sealed
275	Dove St	7	chip sealed
277	Dove St	7	sag but few cracks
151	Eagle Ln	7	bumps
165	Eagle Ln	8	minimal l and t
183	Eagle Ln	8	chip and Crack sealed
184	Eagle Ln	8	chip sealed
250	Eagle Ln	8	chip sealed
15	East St	8	transverse cracks sealed
17	East St	8	transverse cracks sealed
20	East St	8	transverse cracks sealed
24	East St	8	transverse cracks sealed
251	Edgewater Farm Dr	8	cracks sealed previous chip seal
41	Fallen Leaf Cir	8	bumps minor cracking
108	Forest Pl	6	L&T
48	Four Seasons Pl	8	minor cracking sealed
79	Four Seasons Pl	8	larger cracks filled
80	Four Seasons Pl	8	larger cracks filled
102	Fox Loop	6	moderate level cracks and bumps
230	Golf Shores Rd	6	old
231	Golf Shores Rd	6	old
232	Golf Shores Rd	6	old
104	Gopher Ln	7	weathered some cracking
25	Graf Rd	10	new
200	Graf Rd	10	new
36	Green Scene Dr	8	minor cracking
37	Green Scene Dr	8	minor crack
39	Green Scene Dr	8	minor cracking
43	Green Scene Dr	8	minor cracking
247	Green Scene Dr	8	minor cracking
235	Harvest Ct	8	chip sealed
236	Harvest Rd	7	chip sealed some cracks coming through and patches

237	Harvest Rd	8	chip sealed
52	Hillside Pass	9	Minor cracks
54	Hillside Pass	9	minor cracks
241	Humming Bear Ln	6	several cracks sealed some are moderate weathering
35	Huron Cir	8	chip sealed Crack sealed
172	Lakeshore Dr	8	weathered few cracks
174	Lakeshore Dr	8	weathered few cracks
176	Lakeshore Dr	8	weathered few cracks
188	Lakeshore Dr	7	some patches weathered
192	Lakeshore Dr	8	weathered few cracks
195	Lakeshore Dr	8	weathered few cracks
196	Lakeshore Dr	8	weathered few cracks
164	Mohican Cir	7	some sags transverse cracks
118	N Birchwood Dr	8	some cracking
101	N Lakeview Dr	8	minor cracking
106	N Lakeview Dr	8	minor cracking sealed
113	N Lakeview Dr	8	l and t cracking newer chip seal patches
124	N Lakeview Dr	7	patch some raveling block cracking sealed
248	N Lakeview Dr	8	weathered few cracks
120	N Pinewood Dr	8	some cracking and bumps
122	N Spruce Dr	7	block cracking coming through
146	Navaho Trl	8	chip seal few cracks
147	Navaho Trl	8	chip seal few cracks
267	Navaho Trl	8	chip seal few cracks
276	Navaho Trl	8	chip seal
87	Nickel Rd	8	weather some transverse
208	Nickel Rd	8	weathered some l and t sealed
238	Nickel Rd	8	weathered some transverse
239	Nickel Woods Cir	7	weathered and edge cracking
110	North Dr	7	cracks
111	North Dr	7	l t
112	North Dr	7	l t
114	North Dr	7	l t
115	North Dr	9	newr
4	Northwoods Cir	6	weathered and cracked
5	Northwoods Ln	7	slight weathering and transverse cracks sealed
13	Northwoods Ln	6	weathered edge cracks patches
19	Northwoods Ln	6	weathered some larger cracks
233	Northwoods Ln	5	alligatored



258	Northwoods Ln	6	weathered edge cracking some alligator
29	Old Co Rd 39	7	L&T cracking
30	Old Co Rd 39	7	L&T cracking bumps
210	Old Co Rd 39	7	L&t cracking bumpos
224	Oriole Cir	7	transverse
249	Osceola Cir	9	limited cracking chip sealed
31	Ottawa Trl	8	chip sealed L&T cracking
32	Ottawa Trl	8	chip sealed and transverse cracks
33	Ottawa Trl	8	chip sealed transverse cracks
91	Ouray Dr	8	transverse cracks
189	Owl Cir	8	chip
278	Papago Cir	9	new chip seal
143	Pawnee Cir	8	chip seal transverse
153	Percheron Dr	8	chip seal transverse
154	Percheron Dr	8	chip seal
156	Percheron Dr	8	weathered
148	Pima Cir	9	chip seal
198	Piney Way	5	patches potholes
225	Piney Way	5	patches potholes
178	Poplar Dr	8	chip sealed and Crack sealed
89	Pueblo Cir	8	weathered minimal cracks
42	Raccoon Ln	8	minor cracking
64	Ranchette Dr	9	minor cracking
66	Ranchette Dr	9	newer minor cracking
69	Ranchette Dr	5	patching older block cracking
71	Ranchette Dr	9	newer pavement
72	Ranchette Dr	9	newer pavement
98	Ranchette Dr	9	newer pavement
144	Ranchette Dr	7	moderate transverse cracks
168	Ranchette Dr	7	larger transverse
256	Ranchette Dr	7	moderate transverse and block cracking
257	Ranchette Dr	7	block cracking
263	Ranchette Dr	7	block cracking
264	Ranchette Dr	7	block cracking
109	Red Oak Ln	6	weathered patches bumps transverse
245	Red Oak Ln	6	weathered transverse and patches
194	Red Pine Dr	7	cracks l and t
207	Rice Creek Dr	6	alligator cracking and block
128	Robin Ln	7	bumps and transverse

129	Robin Ln	7	patches and transverse
70	Robinhood Ln	7	l&t edge cracking
255	Rolling Oaks Trl	8	transverse cracks sealed
254	Russ Ct	8	transverse cracks sealed previous chip seal
223	Sand Beach Dr	7	weathered patches alligator
38	Scenic Overlook	9	minor cracking
40	Scenic Overlook	9	minor cracking
45	Scenic Overlook	8	minor l&t pavement sag
46	Scenic Overlook	9	minor cracking
180	Shoreview Ln	8	weathered l and t
197	Shoreview Ln	7	weathered l and t cracking
159	Sioux Dr	8	chip seal
161	Sioux Dr	8	chip sealed
242	Sioux Dr	8	chip seal few transverse
56	Ski Chalet Dr	8	minor l&t
57	Ski Chalet Dr	8	minor l&t
58	Ski Chalet Dr	8	minor cracking
59	Ski Chalet Dr	8	minor cracking
60	Ski Chalet Dr	8	minor l&t
73	Ski Chalet Dr	8	transverse cracking
81	Ski Chalet Dr	9	newer
82	Ski Chalet Dr	9	newer
85	Ski Chalet Dr	8	minor cracking
88	Ski Chalet Dr	8	minor cracking
244	Ski Chalet Dr	8	minor l&t
50	Snowman Cir	8	minor cracking
150	Sparrow Dr	8	chip seal
215	Squirrel Ln	6	alligator
281	Suffolk Cir	9	new chip seal
166	Suffolk Dr	7	weathered transverse
282	Suffolk Dr	9	new chip seal
283	Suffolk Dr	9	new chip seal
44	Summer Dr	8	minor cracking
49	Summer Dr	7	larger cracks repairs
74	Summer Dr	7	patched
77	Summer Dr	8	chip sealed
78	Summer Dr	8	minor cracking
240	Summer Dr	8	chip and some edge
199	Sunset Strip	10	new

107	Terminal Rd	7	chip sealed transverse cracking
116	Terminal Rd	6	weathered patching transverse
26	Timberlane Pt	6	weathering l&t cracking
27	Timberlane Pt	6	L & T cracking bumps
28	Timberlane Pt	5	patches, raveling edge cracking
83	Weavers Point Rd	8	cracks sealed
84	Weavers Point Rd	8	some cracks
99	Weavers Point Rd	8	cracks sealed
100	Weavers Point Rd	8	more cracks
137	Weavers Point Rd	8	cracks sealed
138	Weavers Point Rd	8	cracks bumps
139	Weavers Point Rd	9	newer
140	Weavers Point Rd	9	newer
141	Weavers Point Rd	8	cracks sealed
227	Weavers Point Rd	8	cracks
7	West St	7	weathered and cracked
12	West St	7	weathered and cracked
14	West St	7	weather's and cracked
16	West St	6	weathered and alligator
18	West St	7	weathered and cracked
21	West St	7	weathered and cracked
23	West St	7	weathered and cracked
209	West St	7	weathered and cracked
51	White Overlook Dr	8	weathered minor cracking pavement sag
229	Whitebirch Dr	9	new chip seal
271	Whitebirch Dr	9	new pavement beyond this to Dove street
272	Whitebirch Dr	9	chip seal few cracks
279	Whitebirch Dr	9	new chip seal
280	Whitebirch Dr	9	new chip seal
226	Wildwood Ct	8	minor cracking
201	Wildwood Ln	6	weathered and cracked
268	Wildwood Ln	6	weathered patch alligator
269	Wildwood Ln	5	weathered block cracking
270	Wildwood Ln	5	alligator cracking weathered
47	Winter Trl	9	minor cracking
53	Winter Trl	8	bumps minor cracking
55	Winter Trl	9	newer pavement
103	Wolf Ln	8	cracks sealed
105	Wolf Ln	8	cracks sealed



142	Wolf Ln	8	cracks sealed
212	Wolf Ln	8	cracks sealed
131	Wren Dr	7	sags and ravel spots
63	Yuma Cir	8	chip sealed cracks
145	Zuni Cir	8	chip seal
	<b>Average</b>	<b>7.48175182</b>	