

Traverse City Downtown Development Authority Regular Meeting

September 17, 2021

8:30 am

Commission Chambers, Governmental Center
400 Boardman Avenue
Traverse City, Michigan 49684



The City of Traverse City does not discriminate on the basis of disability in the admission to, access to, treatment in, or employment in, its programs or activities. Penny Hill, Assistant City Manager, 400 Boardman Avenue, Traverse City, Michigan 49684, phone 231-922-4440, TDD/TTY 231-922-4412, VRS 231-421-7008, has been designated to coordinate compliance with the non-discrimination requirements contained in Section 35.107 of the Department of Justice regulations. Information concerning the provisions of the Americans with Disabilities Act, and the rights provided thereunder, are available from the ADA Coordinator.

If you are planning to attend and you have a disability requiring any special assistance at the meeting and/or if you have any concerns, please immediately notify the ADA Coordinator.

The City of Traverse City and Downtown Development Authority are committed to a dialog that is constructive, respectful and civil. We ask that all individuals interacting verbally or in writing with board members honor these values.

Downtown Development Authority:
c/o Jean Derenzy, CEO
(231) 922-2050
Web: www.downtowntc.com
303 East State Street, Suite C
Traverse City, MI 49684

Welcome to the Traverse City Downtown Development Authority meeting!

Agenda

Page

1. CALL TO ORDER

2. ROLL CALL

3. REVIEW AND APPROVAL OF AGENDA

- A. Consideration of approving the agenda.

4. CONSENT CALENDAR

The purpose of the consent calendar is to expedite business by grouping non-controversial items together to be dealt with by one DDA Board motion without discussion. Any member of the DDA Board, staff or the public may ask that any item on the consent calendar be removed therefrom and placed elsewhere on the agenda for individual consideration by the DDA Board; and such requests will be automatically respected. If an item is not removed from the consent calendar, the action noted in parentheses on the agenda is approved by a single DDA Board action adopting the consent calendar.

- A. Consideration of approving the minutes of the Regular Meeting of August 20, 2021 (Approval Recommended) (Jean Derenzy) 5 - 8
[Downtown Development Authority Regular Meeting - 20 Aug 2021 - Minutes - PDF](#)
- B. Consideration of approving Financial Reports and Disbursements for DDA, TIF 97, Old Town TIF, Parking Services and Arts Commission for August 2021 (approval recommended) (Jean Derenzy, Harry Burkholder, Nicole VanNess) 9 - 17
[DDA General, TIF 97 and Old Town TIF Financials August 2021 - PDF](#)
[TC Parking Services Financials August 2021 - PDF](#)
[TC Arts Commission Financials August 2021 - PDF](#)
- C. Consideration of approving a three-year service order for Parking Garage Washdown Maintenance (approval recommended) (Jean Derenzy, Nicole VanNess) 19
[Garage Washdown 3 Year Maintenance Memo \(Jean Derenzy, Nicole VanNess\) - PDF](#)

5. ITEMS REMOVED FROM CONSENT CALENDAR

6. SPECIAL ORDER OF BUSINESS

- A. Presentation: FishPass. Bob Lambe, Executive Secretary of the Great Lakes Fishery Commission 21
[FishPass Update Presentation Memo \(Jean Derenzy\) - PDF](#)
- B. Presentation: Overview of Healthy Drinking Culture Draft Report - Elise Craft, Megan Motil (input from DDA Board Members welcomed) 23 - 43
[Healthier Drinking Culture Draft Report Memo \(Jean Derenzy\) - PDF](#)
[Healthier Drinking Culture Final Draft Strategic Plan - PDF](#)
-

7. OLD BUSINESS

- A. East Front Street Project Update (Suzanne Schulz, Progressive AE) 45 - 46
[East Front Street Project Memo \(Schulz\) - PDF](#)
- B. Downtown Tree Management Plan (approval recommended) (Jean Derenzy, Harry Burkholder) 47 - 111
[Downtown Tree Management Plan Memo \(Jean Derenzy, Harry Burkholder\) - PDF](#)
[Downtown Tree Management Plan - PDF](#)
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8. NEW BUSINESS

- A. CEO Report - Project Updates 113 - 132
[Project Updates Memo \(Jean Derenzy, Harry Burkholder\) - PDF](#)
[MADVAC LS175 \(Sidewalk Cleaner\) Product Sheet - PDF](#)
[Bigbelly Product Sheet - PDF](#)
-

9. BOARD MEMBER UPDATES

- A. Arts Commission (Steve Nance) 133 - 134
[September Arts Commission Board Member Update Memo \(Steve Nance\) - PDF](#)
-

10. STAFF REPORTS

- A. Transportation Mobility Director (Nicole VanNess) 135 - 136
[Transportation Mobility Report \(Nicole VanNess\) - PDF](#)
- B. Community Development Director (Katy McCain) 137 - 138
[Community Development Director Report \(Katy McCain\) - PDF](#)
-

11. RECEIVE AND FILE

A. Arts Commission August 18, 2021 Meeting Minutes

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[Arts Commission August 18, 2021 Meeting Minutes - PDF](#)

12. PUBLIC COMMENT

13. ADJOURNMENT



**Minutes of the
Downtown Development Authority for the City of Traverse City
Regular Meeting
Friday, August 20, 2021**

A regular meeting of the Downtown Development Authority of the City of Traverse City was called to order at the Commission Chambers, Governmental Center, 400 Boardman Avenue, Traverse City, Michigan, at 8 a.m.

The following Board Members were in attendance: Mayor Jim Carruthers, Board Chair Gabe Schneider, Board Member Steve Nance, Board Member Peter Kirkwood, Board Treasurer Stephen Constantin, Board Vice Chair Scott Hardy, Board Member T. Michael Jackson, Board Member Leah Bagdon-McCallum, Board Member Jeff Joubran, and Board Secretary Richard Lewis

The following Board Members were absent: Board Member Damian Lockhart and Board Member Pam Marsh

Chairperson Schneider presided at the meeting.

(a) **CALL TO ORDER**

Chairperson Schneider called the meeting to order at 8:31 AM

(b) **ROLL CALL**

(c) **REVIEW AND APPROVAL OF AGENDA**

- (1) Consideration of approving the agenda as presented.

That the agenda be approved as presented.

Moved by Leah Bagdon-McCallum, Seconded by T. Michael Jackson

Yes: Jim Carruthers, Gabe Schneider, Peter Kirkwood, Stephen Constantin, Scott Hardy, T. Michael Jackson, Leah Bagdon-McCallum, Jeff Joubran, and Richard Lewis

Absent: Steve Nance, Damian Lockhart, and Pam Marsh

CARRIED. 9-0-3 on a recorded vote

(d) **CONSENT CALENDAR**

The purpose of the consent calendar is to expedite business by grouping non-controversial items together to be dealt with by one DDA Board motion without discussion. Any member of the DDA Board, staff or the public may ask that any item on the consent calendar be removed therefrom and placed elsewhere on the agenda for individual consideration by the DDA Board; and such requests will be automatically respected. If an item is not removed from the consent calendar, the action noted in parentheses on the agenda is approved by a single DDA Board action adopting the consent calendar.

- (1) Consideration of approving the minutes of the Regular Meeting of July 16, 2021 (approval recommended) (Jean Derenzy)

Chairperson Schneider requested the minutes be amended to reflect the meeting was presided by Chairperson Schneider instead of Chairperson McCallum.

- (2) Consideration of approving Financial Reports and disbursements for DDA, TIF 97, Old Town TIF, Parking and Arts Commission for July 2021 (approval recommended) (Jean Derenzy, Harry Burkholder, Nicole VanNess)

That the consent calendar be approved as amended.

Moved by Leah Bagdon-McCallum, Seconded by Peter Kirkwood

Yes: Jim Carruthers, Gabe Schneider, Peter Kirkwood, Stephen Constantin, Scott Hardy, T. Michael Jackson, Leah Bagdon-McCallum, Jeff Joubran, and Richard Lewis

Absent: Steve Nance, Damian Lockhart, and Pam Marsh

CARRIED. 9-0-3 on a recorded vote

(e) **ITEMS REMOVED FROM CONSENT CALENDAR**

(f) **SPECIAL ORDER OF BUSINESS**

- (1) Annual Informational Meeting (Verbal and Power-Point Presentation Provided) (Jean Derenzy)

The following addressed the Board:
Jean Derenzy, DDA CEO

(g) **NEW BUSINESS**

- (1) Parking Subcommittee Appointment

The following addressed the Board:
Scott Hardy, Parking Subcommittee Chairperson

That the DDA Board of Directors appoint Doug Hickman to the Parking Subcommittee.

Moved by Scott Hardy, Seconded by T. Michael Jackson

Yes: Jim Carruthers, Gabe Schneider, Peter Kirkwood, Stephen Constantin, Scott Hardy, T. Michael Jackson, Leah Bagdon-McCallum, Jeff Joubran, and Richard Lewis

Absent: Steve Nance, Damian Lockhart, and Pam Marsh

CARRIED. 9-0-3 on a recorded vote

(h) **CEO REPORT**

(1) Project Updates

The following addressed the Board:
Jean Derenzy, DDA CEO
Marty Colburn, City Manager

(i) **BOARD MEMBER UPDATES**

(1) Parking Subcommittee (Scott Hardy)

The following addressed the Board:
Scott Hardy, Parking Subcommittee Chair

(2) Arts Commission (Steve Nance)

The following addressed the Board:
Katy McCain, Director of Community Development

(3) Governance Committee (Richard Lewis)

The following addressed the Board:
Richard Lewis, Governance Committee

(j) **STAFF REPORTS**

(1) Transportation Mobility Director (Nicole VanNess)

The following addressed the Board:

- Nicole VanNess, Transportation Mobility Director
- (2) Community Development Director (Katy McCain)

The following addressed the Board:
Katy McCain, Director of Community Development

(k) **RECEIVE AND FILE**

- (1) East Front Street Project Update (Jean Derenzy, Suzanne Schultz, Progressive AE)
- (2) Healthier Drinking Culture Project Update (Jean Derenzy)
- (3) Arts Commission July 21, 2021 Meeting Minutes
- (4) Parking Subcommittee July 2021 Meetings Minutes

(l) **PUBLIC COMMENT**

(m) **ADJOURNMENT**

Chairperson Schneider adjourned the meeting at 9:57 AM

Jean Derenzy, Traverse City DDA
CEO

Traverse City DDA - General

Balance Sheet
As of August 31, 2021

	TOTAL
ASSETS	
Current Assets	
Bank Accounts	5,005,849.66
Accounts Receivable	326,630.26
Other Current Assets	25,369.15
Total Current Assets	\$5,357,849.07
Other Assets	56,491.00
TOTAL ASSETS	\$5,414,340.07
LIABILITIES AND EQUITY	
Liabilities	
Current Liabilities	
Accounts Payable	26,100.09
Credit Cards	-3,312.14
Other Current Liabilities	4,608,893.92
Total Current Liabilities	\$4,631,681.87
Total Liabilities	\$4,631,681.87
Equity	782,658.20
TOTAL LIABILITIES AND EQUITY	\$5,414,340.07

Traverse City DDA - TIF 97

Balance Sheet
As of August 31, 2021

	TOTAL
ASSETS	
Current Assets	
Bank Accounts	
1000 CASH AND CASH EQUIVALENTS	
1001 Fifth Third Checking - 8026	3,665,641.83
Total 1000 CASH AND CASH EQUIVALENTS	3,665,641.83
Total Bank Accounts	\$3,665,641.83
Accounts Receivable	
1200 ACCOUNTS RECEIVABLE	262,591.78
Total Accounts Receivable	\$262,591.78
Other Current Assets	
1100 OTHER CURRENT ASSETS	
1103 Due From Other Funds	492,133.76
Total 1100 OTHER CURRENT ASSETS	492,133.76
Undeposited Funds	0.00
Total Other Current Assets	\$492,133.76
Total Current Assets	\$4,420,367.37
Fixed Assets	
Land	0.00
Total Fixed Assets	\$0.00
Other Assets	
Accounts Rec - DO NOT USE	0.00
Pre-Paid Expense	0.00
Work in Progress	0.00
Total Other Assets	\$0.00
TOTAL ASSETS	\$4,420,367.37
LIABILITIES AND EQUITY	
Liabilities	
Current Liabilities	
Accounts Payable	
2000 ACCOUNTS PAYABLE	46,708.29
Due to City - Capital Projects	0.00
Total Accounts Payable	\$46,708.29
Other Current Liabilities	
2100 DUE TO OTHER FUNDS	48,290.00
2200 DEFERRED REVENUE	486,213.79
Accounts Payable - DO NOT USE	0.00
Total Other Current Liabilities	\$534,503.79
Total Current Liabilities	\$581,212.08
Total Liabilities	\$581,212.08
Equity	
Opening Bal Equity	-21,200.00
Retained Earnings	4,031,234.64
Net Income	-170,879.35
Total Equity	\$3,839,155.29
TOTAL LIABILITIES AND EQUITY	\$4,420,367.37

DDA Old Town TIF

Balance Sheet
As of August 31, 2021

	TOTAL
ASSETS	
Current Assets	
Bank Accounts	
1000 CASH AND CASH EQUIVILENTS	
1001 Fifth Third Checking - 0650	367,320.12
Total 1000 CASH AND CASH EQUIVILENTS	367,320.12
Total Bank Accounts	\$367,320.12
Other Current Assets	
1100 OTHER CURRENT ASSETS	
1103 Due From Other Funds	93,060.42
1104 Due From DDA	282,586.26
Total 1100 OTHER CURRENT ASSETS	375,646.68
Total Other Current Assets	\$375,646.68
Total Current Assets	\$742,966.80
TOTAL ASSETS	\$742,966.80
LIABILITIES AND EQUITY	
Liabilities	
Current Liabilities	
Accounts Payable	
2000 ACCOUNTS PAYABLE	3,717.41
Total Accounts Payable	\$3,717.41
Other Current Liabilities	
2100 DUE TO OTHER FUNDS	3,500.00
Total Other Current Liabilities	\$3,500.00
Total Current Liabilities	\$7,217.41
Total Liabilities	\$7,217.41
Equity	
Retained Earnings	485,100.43
Net Income	250,648.96
Total Equity	\$735,749.39
TOTAL LIABILITIES AND EQUITY	\$742,966.80

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REVENUE AND EXPENDITURE REPORT FOR TRAVERSE CITY

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PERIOD ENDING 08/31/2021

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	ACTIVITY FOR MONTH 08/31/21	YTD BALANCE 08/31/2021	ENCUMBERED YEAR-TO-DATE	UNENCUMBERED BALANCE	% BDGT USED
Fund 585 - AUTOMOBILE PARKING SYSTEM FUND							
Revenues							
Dept 000 - NON-DEPARTMENTAL							
585-000-451.073	RAMSDELL GATE FEES	0.00	0.00	0.00	0.00	0.00	0.00
585-000-502.000	FEDERAL GRANTS	0.00	0.00	0.00	0.00	0.00	0.00
585-000-651.000	PARKING DECK PROCEEDS	0.00	0.00	0.00	0.00	0.00	0.00
585-000-652.000	PARKING FEES-COIN	1,000,000.00	193,950.07	516,865.27	0.00	483,134.73	51.69
585-000-653.000	PERMITS-SURFACE LOTS	150,000.00	12,817.00	20,704.50	0.00	129,295.50	13.80
585-000-653.005	PERMITS-PARKING DECK	0.00	0.00	0.00	0.00	0.00	0.00
585-000-653.007	PERMITS - NEIGHBORHOOD	0.00	240.00	470.00	0.00	(470.00)	100.00
585-000-653.010	DESTINATION DOWNTOWN	0.00	0.00	0.00	0.00	0.00	0.00
585-000-656.010	PARKING FINES	150,000.00	23,062.50	47,155.76	0.00	102,844.24	31.44
585-000-656.020	PARKING FINES-AIRPORT	0.00	0.00	0.00	0.00	0.00	0.00
585-000-656.030	PARKING FINES-COLLEGE	0.00	0.00	0.00	0.00	0.00	0.00
585-000-664.000	INTEREST & DIVIDEND EARNINGS	60,000.00	0.00	7,400.00	0.00	52,600.00	12.33
585-000-668.000	RENTS AND ROYALTIES	0.00	0.00	0.00	0.00	0.00	0.00
585-000-673.000	SALE OF FIXED ASSETS	0.00	0.00	0.00	0.00	0.00	0.00
585-000-674.000	CONTRIBUTIONS-PUBLIC SOURCES	0.00	0.00	0.00	0.00	0.00	0.00
585-000-675.000	CONTRIBUTIONS-PRIVATE SOURCES	0.00	0.00	0.00	0.00	0.00	0.00
585-000-677.000	REIMBURSEMENTS	0.00	0.00	0.00	0.00	0.00	0.00
585-000-683.000	RECOVERY OF BAD DEBTS	0.00	0.00	0.00	0.00	0.00	0.00
585-000-686.000	MISCELLANEOUS INCOME	0.00	2,112.85	2,157.85	0.00	(2,157.85)	100.00
585-000-687.000	REFUNDS AND REBATES	0.00	0.00	0.00	0.00	0.00	0.00
585-000-694.000	OTHER INCOME	0.00	0.00	0.00	0.00	0.00	0.00
585-000-699.000	PRIOR YEARS' SURPLUS	1,682,700.00	0.00	0.00	0.00	1,682,700.00	0.00
Total Dept 000 - NON-DEPARTMENTAL		3,042,700.00	232,182.42	594,753.38	0.00	2,447,946.62	19.55
Dept 585 - AUTOMOBILE PARKING SYSTEM							
585-585-653.005	PERMITS-PARKING DECK	0.00	0.00	0.00	0.00	0.00	0.00
Total Dept 585 - AUTOMOBILE PARKING SYSTEM		0.00	0.00	0.00	0.00	0.00	0.00
Dept 586 - HARDY DECK							
585-586-651.000	PARKING DECK PROCEEDS	120,000.00	46,238.90	121,278.35	0.00	(1,278.35)	101.07
585-586-653.000	PERMITS-SURFACE LOTS	0.00	0.00	0.00	0.00	0.00	0.00
585-586-653.005	PERMITS-PARKING DECK	150,000.00	11,156.00	25,349.00	0.00	124,651.00	16.90
585-586-668.000	RENTS AND ROYALTIES	13,000.00	918.00	1,836.00	0.00	11,164.00	14.12
585-586-677.000	REIMBURSEMENTS	0.00	0.00	0.00	0.00	0.00	0.00
585-586-686.000	MISCELLANEOUS INCOME	0.00	0.00	0.00	0.00	0.00	0.00
585-586-687.000	REFUNDS AND REBATES	0.00	0.00	0.00	0.00	0.00	0.00
Total Dept 586 - HARDY DECK		283,000.00	58,312.90	148,463.35	0.00	134,536.65	52.46
Dept 587 - OLD TOWN DECK							
585-587-651.000	PARKING DECK PROCEEDS	35,000.00	10,363.50	24,895.40	0.00	10,104.60	71.13
585-587-653.005	PERMITS-PARKING DECK	40,000.00	6,151.00	16,054.13	0.00	23,945.87	40.14
585-587-677.000	REIMBURSEMENTS	0.00	0.00	0.00	0.00	0.00	0.00
585-587-686.000	MISCELLANEOUS INCOME	0.00	0.00	0.00	0.00	0.00	0.00
585-587-694.000	OTHER INCOME	0.00	0.00	0.00	0.00	0.00	0.00
Total Dept 587 - OLD TOWN DECK		75,000.00	16,514.50	40,949.53	0.00	34,050.47	54.60

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REVENUE AND EXPENDITURE REPORT FOR TRAVERSE CITY

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PERIOD ENDING 08/31/2021

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	ACTIVITY FOR MONTH 08/31/21	YTD BALANCE 08/31/2021	ENCUMBERED YEAR-TO-DATE	UNENCUMBERED BALANCE	% BDGT USED
Fund 585 - AUTOMOBILE PARKING SYSTEM FUND							
Revenues							
TOTAL REVENUES		3,400,700.00	307,009.82	784,166.26	0.00	2,616,533.74	23.06
Expenditures							
Dept 585 - AUTOMOBILE PARKING SYSTEM							
585-585-702.000	SALARIES AND WAGES	8,900.00	175.40	349.45	0.00	8,550.55	3.93
585-585-704.000	EMPLOYEE OVERTIME	2,200.00	0.00	0.00	0.00	2,200.00	0.00
585-585-714.000	HEALTH SAVINGS ACCT EXPENSE	0.00	(0.58)	33.85	0.00	(33.85)	100.00
585-585-715.000	EMPLOYER'S SOCIAL SECURITY	200.00	12.95	25.80	0.00	174.20	12.90
585-585-716.000	EMPLOYEE HEALTH INSURANCE	100.00	9.16	18.30	0.00	81.70	18.30
585-585-717.000	EMPLOYEE LIFE/DISABILITY INS	0.00	2.23	4.84	0.00	(4.84)	100.00
585-585-718.000	RETIREMENT FUND CONTRIBUTION	700.00	0.00	51.57	0.00	648.43	7.37
585-585-719.000	RETIRES HOSPITALIZATION INS	0.00	0.00	0.00	0.00	0.00	0.00
585-585-720.000	UNEMPLOYMENT COMPENSATION	0.00	0.00	0.00	0.00	0.00	0.00
585-585-721.000	WORKERS COMPENSATION INS	0.00	0.00	0.00	0.00	0.00	0.00
585-585-727.000	OFFICE SUPPLIES	6,000.00	306.98	306.98	0.00	5,693.02	5.12
585-585-740.000	OPERATION SUPPLIES	37,000.00	2,198.41	3,240.94	26,694.86	7,064.20	80.91
585-585-801.000	PROFESSIONAL AND CONTRACTUAL	1,180,800.00	18,769.99	37,909.33	218,068.94	924,821.73	21.68
585-585-810.000	COLLECTION COSTS	500.00	0.00	0.00	0.00	500.00	0.00
585-585-850.000	COMMUNICATIONS	21,600.00	1,699.60	1,955.60	129,478.00	(109,833.60)	608.49
585-585-854.000	CITY FEE	120,000.00	0.00	0.00	0.00	120,000.00	0.00
585-585-860.000	TRANSPORTATION	5,000.00	0.00	287.50	0.00	4,712.50	5.75
585-585-862.000	PROFESSIONAL DEVELOPMENT	1,000.00	0.00	0.00	0.00	1,000.00	0.00
585-585-863.000	TRAINING	2,000.00	0.00	0.00	0.00	2,000.00	0.00
585-585-880.000	COMMUNITY PROMOTION	65,000.00	0.00	0.00	0.00	65,000.00	0.00
585-585-900.000	PRINTING AND PUBLISHING	14,000.00	80.70	80.70	97.94	13,821.36	1.28
585-585-910.000	INSURANCE AND BONDS	13,000.00	0.00	0.00	0.00	13,000.00	0.00
585-585-920.000	PUBLIC UTILITIES	15,000.00	2,228.02	2,264.70	0.00	12,735.30	15.10
585-585-930.000	REPAIRS AND MAINTENANCE	99,700.00	3,148.17	3,176.87	4,648.17	91,874.96	7.85
585-585-930.005	RAMSDELL GATE REPAIR & MAINT	1,000.00	0.00	0.00	0.00	1,000.00	0.00
585-585-940.000	RENTAL EXPENSE	83,000.00	2,838.00	7,008.68	70,101.72	5,889.60	92.90
585-585-956.000	MISCELLANEOUS	0.00	7,738.27	10,218.87	0.00	(10,218.87)	100.00
585-585-959.000	DEPRECIATION EXPENSE	135,000.00	0.00	0.00	0.00	135,000.00	0.00
585-585-964.000	TRANSFERS OUT	0.00	0.00	0.00	0.00	0.00	0.00
585-585-977.000	EQUIPMENT	165,000.00	0.00	0.00	47,738.00	117,262.00	28.93
585-585-988.000	UNALLOCATED FUNDS	0.00	0.00	0.00	0.00	0.00	0.00
Total Dept 585 - AUTOMOBILE PARKING SYSTEM		1,976,700.00	39,207.30	66,933.98	496,827.63	1,412,938.39	28.52
Dept 586 - HARDY DECK							
585-586-727.000	OFFICE SUPPLIES	1,000.00	0.00	0.00	0.00	1,000.00	0.00
585-586-740.000	OPERATION SUPPLIES	9,000.00	33.12	33.12	4,217.37	4,749.51	47.23
585-586-801.000	PROFESSIONAL AND CONTRACTUAL	125,800.00	67.15	241.97	56,143.08	69,414.95	44.82
585-586-850.000	COMMUNICATIONS	3,300.00	0.00	256.00	0.00	3,044.00	7.76
585-586-900.000	PRINTING AND PUBLISHING	0.00	0.00	0.00	0.00	0.00	0.00
585-586-910.000	INSURANCE AND BONDS	8,000.00	0.00	0.00	0.00	8,000.00	0.00
585-586-920.000	PUBLIC UTILITIES	55,000.00	4,336.17	4,336.17	0.00	50,663.83	7.88
585-586-930.000	REPAIRS AND MAINTENANCE	318,100.00	4,970.17	7,182.24	48,620.28	262,297.48	17.54
585-586-940.000	RENTAL EXPENSE	16,500.00	0.00	1,348.29	0.00	15,151.71	8.17
585-586-956.000	MISCELLANEOUS	10,000.00	0.00	0.00	0.00	10,000.00	0.00
585-586-959.000	DEPRECIATION EXPENSE	206,000.00	0.00	0.00	0.00	206,000.00	0.00
585-586-977.000	EQUIPMENT	0.00	0.00	0.00	61,004.20	(61,004.20)	0.00
Total Dept 586 - HARDY DECK		752,700.00	9,406.61	13,397.79	169,984.93	569,317.28	24.36

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REVENUE AND EXPENDITURE REPORT FOR TRAVERSE CITY

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PERIOD ENDING 08/31/2021

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	ACTIVITY FOR MONTH 08/31/21	YTD BALANCE 08/31/2021	ENCUMBERED YEAR-TO-DATE	UNENCUMBERED BALANCE	% BDGT USED
Fund 585 - AUTOMOBILE PARKING SYSTEM FUND							
Expenditures							
Dept 587 - OLD TOWN DECK							
585-587-727.000	OFFICE SUPPLIES	0.00	0.00	0.00	0.00	0.00	0.00
585-587-740.000	OPERATION SUPPLIES	8,000.00	66.96	84.95	4,744.27	3,170.78	60.37
585-587-801.000	PROFESSIONAL AND CONTRACTUAL	107,500.00	220.00	5,560.00	75,453.50	26,486.50	75.36
585-587-850.000	COMMUNICATIONS	5,100.00	136.34	392.34	1,863.66	2,844.00	44.24
585-587-863.000	TRAINING	0.00	0.00	0.00	0.00	0.00	0.00
585-587-900.000	PRINTING AND PUBLISHING	0.00	0.00	0.00	0.00	0.00	0.00
585-587-910.000	INSURANCE AND BONDS	6,000.00	0.00	0.00	0.00	6,000.00	0.00
585-587-920.000	PUBLIC UTILITIES	55,000.00	1,164.61	1,164.61	0.00	53,835.39	2.12
585-587-930.000	REPAIRS AND MAINTENANCE	294,400.00	3,021.84	3,743.49	23,282.13	267,374.38	9.18
585-587-940.000	RENTAL EXPENSE	14,300.00	0.00	1,169.16	0.00	13,130.84	8.18
585-587-956.000	MISCELLANEOUS	0.00	0.00	0.00	0.00	0.00	0.00
585-587-959.000	DEPRECIATION EXPENSE	181,000.00	0.00	0.00	0.00	181,000.00	0.00
585-587-977.000	EQUIPMENT	0.00	0.00	0.00	40,661.50	(40,661.50)	0.00
Total Dept 587 - OLD TOWN DECK		671,300.00	4,609.75	12,114.55	146,005.06	513,180.39	23.55
TOTAL EXPENDITURES		3,400,700.00	53,223.66	92,446.32	812,817.62	2,495,436.06	26.62
Fund 585 - AUTOMOBILE PARKING SYSTEM FUND:							
TOTAL REVENUES		3,400,700.00	307,009.82	784,166.26	0.00	2,616,533.74	23.06
TOTAL EXPENDITURES		3,400,700.00	53,223.66	92,446.32	812,817.62	2,495,436.06	26.62
NET OF REVENUES & EXPENDITURES		0.00	253,786.16	691,719.94	(812,817.62)	121,097.68	100.00

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REVENUE AND EXPENDITURE REPORT FOR TRAVERSE CITY
 PERIOD ENDING 08/31/2021

Page: 1/1

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	ACTIVITY FOR MONTH 08/31/21	YTD BALANCE 08/31/2021	ENCUMBERED YEAR-TO-DATE	UNENCUMBERED BALANCE	% BDGT USED
Fund 282 - PUBLIC ARTS COMMISSION FUND							
Revenues							
Dept 000 - NON-DEPARTMENTAL							
282-000-664.000	INTEREST & DIVIDEND EARNINGS	0.00	0.00	0.00	0.00	0.00	0.00
282-000-674.000	CONTRIBUTIONS-PUBLIC SOURCES	15,000.00	0.00	0.00	0.00	15,000.00	0.00
282-000-675.000	CONTRIBUTIONS-PRIVATE SOURCES	0.00	0.00	0.00	0.00	0.00	0.00
282-000-677.000	REIMBURSEMENTS	0.00	0.00	0.00	0.00	0.00	0.00
282-000-695.000	TRANSFERS IN	30,000.00	0.00	0.00	0.00	30,000.00	0.00
282-000-699.000	PRIOR YEARS' SURPLUS	5,000.00	0.00	0.00	0.00	5,000.00	0.00
Total Dept 000 - NON-DEPARTMENTAL		50,000.00	0.00	0.00	0.00	50,000.00	0.00
TOTAL REVENUES		50,000.00	0.00	0.00	0.00	50,000.00	0.00
Expenditures							
Dept 282 - PUBLIC ARTS COMMISSION							
282-282-727.000	OFFICE SUPPLIES	500.00	0.00	0.00	0.00	500.00	0.00
282-282-801.000	PROFESSIONAL AND CONTRACTUAL	15,000.00	(16.19)	(16.19)	22,914.50	(7,898.31)	152.66
282-282-900.000	PRINTING AND PUBLISHING	0.00	0.00	0.00	0.00	0.00	0.00
282-282-930.000	REPAIRS AND MAINTENANCE	4,500.00	0.00	0.00	0.00	4,500.00	0.00
282-282-970.000	CAPITAL OUTLAY	30,000.00	0.00	0.00	0.00	30,000.00	0.00
282-282-988.000	UNALLOCATED FUNDS	0.00	0.00	0.00	0.00	0.00	0.00
Total Dept 282 - PUBLIC ARTS COMMISSION		50,000.00	(16.19)	(16.19)	22,914.50	27,101.69	45.80
TOTAL EXPENDITURES		50,000.00	(16.19)	(16.19)	22,914.50	27,101.69	45.80
Fund 282 - PUBLIC ARTS COMMISSION FUND:							
TOTAL REVENUES		50,000.00	0.00	0.00	0.00	50,000.00	0.00
TOTAL EXPENDITURES		50,000.00	(16.19)	(16.19)	22,914.50	27,101.69	45.80
NET OF REVENUES & EXPENDITURES		0.00	16.19	16.19	(22,914.50)	22,898.31	100.00



Memorandum

To: Jean Derenzy, DDA CEO
From: Nicole VanNess, Transportation Mobility Director
CC: Gerald Moeggenberg, Facilities Supervisor
Date: September 9, 2021
Re: 3-year Service Order for Parking Garage Washdown Maintenance

Twice a year, all levels of the parking garages are washed down in the fall and spring. The purpose of the washdown is to clean the concrete of any contaminants that could cause deterioration. The fall washdown is specific to oil spots and settled exhaust dust while the spring washdown removes salt and sand brought in throughout the winter. The washdowns are an important part of reducing the breakdown of seals, caulking and rusting.

In the past, we have obtained quotes for each garage for each washdown. In order to reduce administrative time and ensure scheduling can be done in a timely manner, we issued a RFP to provide a service order for the next three fiscal years. Three companies who have the tools available to complete the job have provided proposals. One of the respondents is local and the other two are firms from downstate.

Bidder	2021-22	2022-23	2023-24	3 Year Total
Northern Lightning Wash	\$22,000	\$24,000	\$26,000	\$72,000
RAM Construction	\$112,631	\$117,281	\$120,922	\$350,834
Arisco Contracting	\$220,000	\$224,000	\$228,000	\$672,000

Northern Lightning Wash has provided this service for us in the past. We are familiar with their work and recommend moving forward with a service order.

Recommendation: That the DDA Board recommend the City Commission approve a 3-year service order with Northern Lightning Wash in an amount of \$72,000 for the purposes of bi-annual washdown maintenance at the Hardy and Old Town Parking Garages with budgeted funds available in the Repairs and Maintenance line item of the Hardy Parking Fund and the Old Town Parking Fund.



Downtown Development Authority
303 E. State Street
Traverse City, MI 49684
jean@downtowntc.com
231-922-2050

Memorandum

To: Downtown Development Authority Board

From: Jean Derenzy, DDA CEO

Date: September 13, 2021

Subject: Fishpass Project Update

Great Lakes Fishery Commission Executive Secretary, Robert Lambe will present an update on the FishPass project to the DDA Board at our meeting. Mr. Lambe will be in Traverse City and will be providing details to the Board related to the history of the partnership between the County, City, and Grand Traverse Band, specifically relating to the Boardman/Ottaway River.

The Great Lakes Fishery Commission was established in 1955 by the Canadian/U.S. Convention on Great Lakes Fisheries. The Commission coordinates fisheries research, controls the invasive sea lamprey, and facilitates cooperative fishery management among the state, provincial, tribal, and federal agencies. More information on the Great Lakes Fishery Commission can be found on their website: <http://www.glfc.org/>.



Downtown Development Authority
303 E. State Street
Traverse City, MI 49684
jean@downtowntc.com
231-922-2050

Memorandum

To: Downtown Development Authority Board

From: Jean Derenzy, DDA CEO

Date: August 16, 2021

Subject: Healthier Drinking Culture Draft Plan

On Monday September 13th, each Board member received a copy of the draft Healthier Drinking Culture Plan, as well as an opportunity to schedule a one-on-one interview to discuss the draft plan, via email from Elise Crafts. Ms. Crafts is the lead consultant for the Healthier Drinking Culture (HDC) initiative.

At the meeting, Ms. Crafts and Megan Motil will provide an overview of the process that was completed to develop the draft plan as well as the immediate, short-term, and long-term recommendations. The draft plan has been released to the public through both the HDC website and DDA website. In addition, postcards were sent to stakeholders who had requested to be kept informed that the draft plan was published and able to be reviewed.

In addition to meetings with DDA Board members and elected officials, the project team will host two open houses on the draft plan on September 27th from 12:00 – 1:00 pm and again from 4:00 – 7:00 pm in the large training room at the Governmental Center. The City Commission will be reviewing the draft plan at their September 27th study session.

The Final Plan will be presented to the DDA Board for consideration at the October 15th meeting and at the City Commission meeting at their October 18th meeting.

We look forward to a productive conversation and your thought and feedback is welcomed.

**HEALTHIER
DRINKING
CULTURE**

Creating a healthier drinking culture, together.

HEALTHIER DRINKING CULTURE DRAFT STRATEGIC PLAN

TRAVERSE CITY, MICHIGAN

Prepared For



 CITY of
TRAVERSE CITY MICHIGAN

Prepared By

STATECRAFT



 **LAKE EFFECT**

EXECUTIVE SUMMARY

The Healthier Drinking Culture project is led by the Traverse City Downtown Development Authority (DDA), in collaboration with the City of Traverse City (City) and the Traverse City Police Department (TCPD).

According to local stakeholders, the Traverse City community has a drinking culture problem, specifically with binge drinking and overconsumption in the City's downtown core, a popular destination for residents and tourists alike.

There are 119 liquor license locations within the City of Traverse City, a community of approximately 15,000 people (per the US Census). City police cite alcohol as an underlying factor in nearly every call the police department responds to, including trespassing, disorderly conduct, assault and battery, and domestic violence activities. Business owners are concerned about disorderly crowds, unsafe conditions for patrons and staff, loitering, and property damage due to overconsumption. Community stakeholders, including residents, businesses, and nonprofits, are concerned about the drinking culture's impact on Traverse City's character, resources, and reputation.

Informed by a robust community engagement process, these partners have developed this strategic plan to lay out a desired vision for Traverse City's drinking culture as well as identify the immediate, short-term, and long-term action steps to achieve that vision.

Given the complexity of the topic, this project did not identify, or intend to identify, one solution to create a healthier drinking culture in Traverse City. However, this strategic plan contains numerous recommendations sourced directly from the individuals and organizations who participated in this process—ranging from Traverse City neighborhood residents, an executive of a Northern Michigan addiction treatment nonprofit, owners and managers of downtown Traverse City establishments serving alcohol, and other downtown business owners and managers.

The recommendations in this plan will require continued coordination, conversation, and community engagement by the DDA, City, TCPD, and stakeholders who helped to inform the action steps, as well as, potentially, new stakeholders who have not yet participated.

Contents

Project Introduction	3	Recommended Goal and Actions	10
Background		Goals	
Scope and Approach		Action Plan	
Next Steps			
Existing Conditions	5	Resources	19
Community Vision and Experience		Appendices	
Data		Healthier Drinking Culture	
		Engagement Summary Report	

Project Introduction

The Healthier Drinking Culture project is led by the Traverse City Downtown Development Authority (DDA), in collaboration with the City of Traverse City (City) and the Traverse City Police Department (TCPD).

Informed by a robust community engagement process, these partners have developed this strategic plan to lay out a desired vision for Traverse City's drinking culture as well as identify the immediate, short-term, and long-term action steps to achieve that vision.

Background

The Traverse City community has a drinking culture problem, specifically with binge drinking and overconsumption in the City's downtown core, a popular destination for residents and tourists alike.

There are 119 liquor license locations within the City of Traverse City, a community of approximately 15,000 people (per the US Census). City Police Chief Jeff O'Brien names alcohol as an underlying factor in nearly every call his department responds to, including trespassing, disorderly conduct, assault and battery, and domestic violence activities. Business owners are concerned about disorderly crowds, unsafe conditions for patrons and staff, loitering, and property damage due to overconsumption. Community stakeholders, including residents, businesses, and nonprofits, are concerned about the drinking culture's impact on Traverse City's character, resources, and reputation.

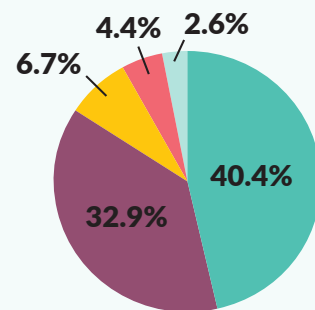
The DDA, City, and TCPD desire for Traverse City to be a vibrant, safe, and attractive place for all individuals to live, work, and play. They recognize that the prevalence of alcohol consumption in downtown Traverse City has created a drinking culture that is not welcoming for all individuals, and which relies on reactive law enforcement and emergency services to maintain safety and order in the downtown core. Based on feedback from their constituents, these three partners have launched the Healthier Drinking Culture project to identify ways the community can proactively work together to create a drinking culture that fosters safe, welcoming, and celebratory drinking expectations, behaviors, and norms in Traverse City.

WHO PARTICIPATED

Survey

- March 2021
- 1,130 responses

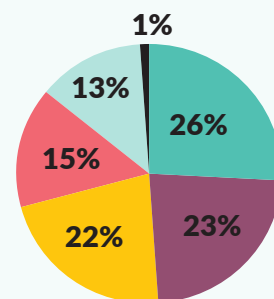
Local Zip Code Responses



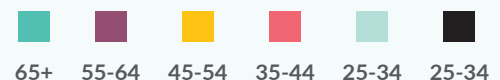
Local Zip Codes



Diverse Age Representation



Ages Represented



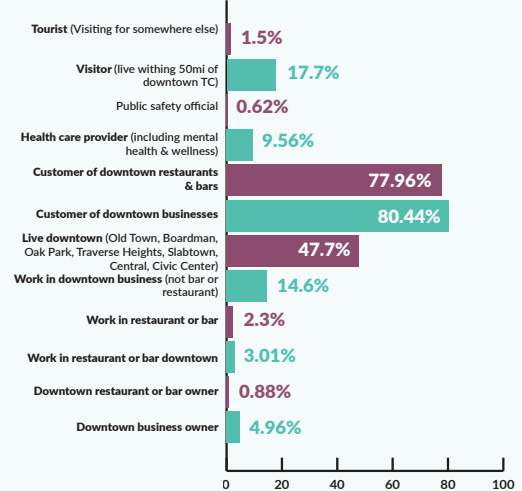
Scope and Approach

The drinking culture in Traverse City is a complex and systemic issue, informed by cultural norms and behaviors that extend beyond the boundaries of our community. Stakeholders who impact and who are impacted by the drinking culture are a diverse group, including residents, visitors, liquor license holders, other business owners, addiction treatment providers, mental health providers, public safety providers, elected officials, event managers, and marketing and tourism promoters, each with varied experiences, perspectives, values, and priorities.

This project focused on engaging and listening with these stakeholders to understand community members' insights, experiences, challenges, and expectations related to the drinking culture in Traverse City. This project also relied on recommendations provided by the National Institute of Health and World Health Organization, intended for communities seeking to reduce alcohol-related incidents such as drunk driving, underage drinking, and alcohol-related assault. Additionally, the project team sought to learn from other communities regarding their drinking culture efforts and best practices and while this project appears to be on the cutting edge of local community drinking culture change, there are relevant best practices to glean from other communities' experiences working with recreational marijuana.

Given the complexity of the topic, this project did not identify, or intend to identify, one silver bullet solution to create a healthier drinking culture in Traverse City. However, this strategic plan contains numerous recommendations sourced directly from the individuals and organizations who participated in this process—ranging from Traverse City neighborhood residents, an executive of a Northern Michigan addiction treatment nonprofit, owners and managers of downtown Traverse City establishments serving alcohol, and other downtown business owners and managers.

Which of the options below describes you? (Check all that apply.)



Interviews

- April – July 2021
- 74 one-on-one interviews
- Liquor license holders; downtown business owners; neighborhood residents; art and cultural experience managers; event managers and tour hosts; event and tourism marketers and promoters; health and wellness professionals; law enforcement; local government

Listening Sessions

- June 2021
- 7 sessions
- Neighborhood residents; people who do not drink alcohol; marketing and media; adjacent business district (North Boardman); downtown restaurant, bar and tasting room employees; downtown customers

Next Steps

The recommendations in this plan will require continued coordination, conversation, and community engagement by the DDA, City, TCPD, and stakeholders who helped to inform the action steps, as well as, potentially, new stakeholders who have not yet participated.

It is the responsibility of the DDA, City, and TCPD to work with their partners and stakeholders to implement action steps in accordance with their capacity, respective budgets, and priorities, and with ongoing feedback from the stakeholders who impact, and are impacted by, the Traverse City drinking culture.

Existing Conditions

To inform this strategic plan, the project team listened to local stakeholders to understand community members' perspectives, insights, experiences, challenges, and expectations related to the existing and the desired vision for a healthier drinking culture in Traverse City. The team received 1,130 responses to a community survey, conducted over 70 one-on-one interviews, and hosted multiple listening sessions.

The engagement report attached in Appendix B shares detailed information about the engagement activities and the vision elements, strengths, challenges, and ideas shared through the community engagement effort. This information is also summarized below.

Existing Strengths

Local stakeholders identified existing strengths of the current drinking culture in Traverse City, summarized in the chart on the following page.

Traverse City Drinking Culture Existing Strengths

The strong craft beverage culture - wineries, beer, and spirits. Focusing on craft products and sense of place: the glamour of the building, the vineyard, the local sources of the product, the care the craftsperson put into making the product, the stories of the people creating and offering the service.

Social connections and people enjoying social time with friends.

TIPS and TAM training and certification for staff.

Empowering staff to decline service to people whom have over consumed.

Businesses voluntarily closing at or before midnight.

Making alcohol part of the experience, not the experience.

Serving food with alcohol.

People drinking responsibly, understanding personal limits, and respecting people and places.

Businesses hosting experiences and tours that are not coupled with alcohol.

Police are present as a deterrent. Downtown business owners and staff having a strong relationship with police and public safety officers.

Relationships between businesses. Sharing goals and being on the same page with intentions with staff and customers. Communicating when incidents are occurring, like cutting someone off who may head next door to a neighboring bar or restaurant.

Businesses cooperating and sharing resources and ideas about how to co-create a healthy culture along with customers, employees, and community partners.

Events and activities where alcohol is not featured (e.g., Tree Lighting ceremony, concerts at the Pavilions, guided walks at Botanic Gardens, etc.)

Existing Issues and Challenges

Local stakeholders identified several existing issues and challenges with the current drinking culture in Traverse City, summarized in the chart below.

Traverse City Drinking Culture Existing Issues & Challenges

Litter and property damage (e.g., vomit and urine) at businesses adjacent or close to certain bars. Businesses not cleaning up after customers who make a mess on other properties.

Rowdy behavior and fights in public spaces including sidewalks, alleys, and parks.

Theft, including shoplifting for sport, because people have been drinking.

The behavior of people on brew and wine bus tours or paddle tours who start drinking early in the day and drink all day.

Cherry Festival and the Beer Tent.

Having alcohol at all types of events, from bike rides to book clubs.

The Peddle Pub through the neighborhoods.

The behavior of people in bachelorette parties and other group gatherings.

The behavior of people who are drinking at wine tours all day, then arriving at downtown restaurants.

Drinking and driving, including automobiles and boating.

Limited transportation options, particularly late in the evening and to areas outside of the downtown.

Happy Hour and specials promotions that encourage people to over consume.

Bars open past midnight. "Nothing good happens after midnight."

The public behaviors of patrons at Union Street, Dillinger's, and Bootleggers.

Social expectations and habits, including "Mommy needs wine" and parties among friends, or events, where there is subtle peer pressure and an expectation to drink or buy alcohol.

A culture that promotes day drinking.

Not enough non-alcoholic drinks options on menus that aren't sodas.

Reactions and assumptions made by servers when someone orders a non-alcoholic drink.

The social stigma that comes with choosing not to drink alcohol.

Customers showing up at establishments and expecting a different type of experience than what is offered regarding reservations, pace, and timing.

Shame and blame, including on individuals whose behaviors have had negative impacts, and on businesses who are doing their best to help people manage consumption responsibly.

Customers' hostility toward employees and businesses who choose to cut someone off.

Community Vision & Experiences

The words and phrases below are representative of the elements of a “healthy drinking culture” shared by participants in the survey, interviews, and listening sessions.

A healthy drinking culture in Traverse City fosters a **joyful, celebratory, respectful, and fun** environment **for all people who live, work, and play in Traverse City whether or not they choose to drink alcohol**. Alcohol is **regulated** and **available to be responsibly enjoyed in moderation** and **as part of a meal** but is **balanced** and **not centered at every experience, celebration, event, or activity**. **Safe transportation** options are easily available, and **businesses and individuals are held accountable** for their actions. Experiences **celebrate the local craft, food, arts, culture, recreation, and social connection opportunities** in Traverse City and **normalize folks’ participation in these activities, with a wide range of beverages available for consumption**.

Several high-level themes emerged during the community listening process. These are described below.

Care for Community: Interviewees shared their passion for the community and a desire to celebrate what is good about it. Caring about neighbors, people who live here, people who choose to visit, and the success of small businesses were common thoughts and themes. People are proud of the community’s craft beverage industry - wine, beer, and spirits – and of the small businesses that offer experiences and services that demonstrate care for customers, employees, neighboring businesses, and the broader community.

Impact versus Intention: People are seeing a mix of healthy and unhealthy behaviors. Related to behaviors with a negative impact, such as related to noise, people shared their observations of the impact of behaviors and also their perceptions of intentions. Many people who shared concerns also shared they understood people were motivated by a desire to have fun, not harm others. When talking about tourists and visitors’ behaviors, some mentioned their own tendency to be more relaxed with their behavior when they traveled. When older people talked about the behaviors they have observed with younger people, they talked about behaving differently in their 20s than they do now.

Expectation Management: Many people associate alcohol with personal and event-based celebration. People talked about their desire to welcome people into the community, and the importance and enjoyment of the positive aspects of alcohol. They also shared a desire to create and manage expectations around behaviors and experiences, and to do this in a way that honored the small town nature of the community, a sense of neighborliness and the quiet enjoyment of living in a residential area, and of personal responsibility. Some people shared that people’s desire for specific experiences while on vacation may not align with the expectations of those living here. Many shared they would like experiences and events to not be centered around alcohol consumption.

Sense of Empowerment: Many interviewed shared they feel like they have control of their individual choices and behaviors, but they do not feel empowered to impact the overall culture. There was a strong desire to work on issues together, and an awareness that there was no single “solution” to creating a healthy culture.

Data

There are 119 liquor license locations in the City of Traverse City. Below is a year-to-year comparison of liquor license locations from 2014–2020.

YEAR-TO-YEAR COMPARISON	
Year	Active Liquor Licenses
2020	111
2019	115
2018	118
2017	91
2016	83
2015	80
2014	79

Each location may have one or more license types. There are 225 licenses in the City of Traverse City, as specified to the right. These are defined by the [Michigan Liquor Control Commission](#).

Excessive Drinking: How Northern Michigan Compares to State

In Grand Traverse County, an estimated 20.7% of adults are “excessive” drinkers based on results from the Behavioral Risk Factor Surveillance System, an annual phone survey conducted by the Michigan Department of Health and Human Services. This percentage is comparable to the overall rate of excessive drinking in Michigan which is 20%. Grand Traverse County ranks 25th out of 83 Michigan counties.

Raw data from the same survey above found that 26% of respondents binge drink (five or more drinks on one occasion for men and four or more drinks on one occasion for women) and 10% are heavy drinkers (more than two drinks daily for men or one drink daily for women).

Types of Liquor Licenses in Traverse City

225 liquor licenses in Traverse City

- 550 Resort: 1
- B Hotel Count: 3
- Brew Pub Count: 2
- Broker Count: 5
- Class C Count: 25
- Club Count: 3
- Joint Off-Premises Tasting Room Count: 3
- Manufacturer Count: 1
- Micro Brewer Count: 9
- Off-Premise Tasting Room Count: 2
- Off-Premise Tasting Room Full Drinks Count: 1
- On-Premise Tasting Room Count: 10
- Redevelopment Class C Count: 18
- Redevelopment Tavern Count: 1
- Resort Class B Count: 1
- Resort Class C Count: 12
- Resort Specially Designated Distributor Count: 2
- Salesperson Count: 5
- Small Distiller Count: 3
- Small Wine Maker Count: 9
- Special Act Count: 1
- Specially Designated Distributor Count: 13
- Specially Designated Merchant Count: 85
- Vendor Representative Count: 5
- Warehouser Count: 1
- Watercraft Count: 1
- Wholesale Count: 1
- Wholesale Warehouser Count: 1
- Wine Tasting Room Count: 1

Recommended Goals and Actions

Based on community feedback and best practice research, the following goals were identified to create a healthier drinking culture in Traverse City, related to public policy, licensing, and public safety; training and education; and community experience.

Goals

Policies, Licensing, and Public Safety

Enact and update policies and processes that provide clear expectations, ensure fair and equitable treatment of all stakeholders, and align with the drinking culture vision.

Training and Education

Support coordinated and accessible training, education, communication, and implementation of drinking culture best practices between Traverse City license holders, substance use prevention providers, and public safety providers.

Community Experience

Support activities, storytelling, programming, and events which foster expectations and experiences aligned with the drinking culture vision for stakeholders who live, work, and play in Traverse City.

Action Plan

These goals are supported by the action steps described below, grouped according to their timeline priority: immediate (0-18 months), short-term (1-3 years) and long-term (4-5 years). This plan involves the parallel and collaborative action of independent entities including units of government, nonprofit organizations, and private businesses and stakeholders. There is no one entity or action responsible for creating a healthier drinking culture in Traverse City, but rather a series of individual actions that collectively foster a safe, welcoming, and celebratory drinking culture. These actions were suggested and vetted by participating stakeholders.

This plan includes more detail for the immediate action steps, versus the short-term and long-term action steps. As immediate actions steps are implemented, entities and stakeholders may evaluate their progress and adjust course, if needed. At the discretion of entities responsible for the action steps, this plan may be evaluated and updated annually, or more frequently, to account for changes in conditions or resources.

Each action step includes an entity or entities designated as “responsible”, “support” and “inform, or consult”. Definitions for each role are described below:

- **Responsible:** This is the action lead – the individual or entity who is ultimately responsible for getting the job done.
- **Support:** The stakeholder(s) in this role actively work on the task and help the individual or entity responsible.
- **Inform:** The stakeholder(s) in this role need to be informed of the task’s progress and any decisions being made.
- **Consult:** The stakeholder(s) in this role offer advice or guidance regarding a task or decision, but are not responsible for the task.

Immediate Action Steps (0-18 months)

Policies, Licensing, and Public Safety					
Action	Responsible	Support	Inform or Consult	Resources Needed	Measure of Success by June 2023
Update the Traverse City ordinances and the local liquor license permit process to create objective and clear criteria for the desired number, type, and location of liquor licenses, including at the neighborhood and corridor level.	City of Traverse City Planning Director, City of Traverse City Clerk, and Traverse City Police Department	Downtown Development Authority	Businesses, Neighbors, Community	City of Traverse City/Downtown Development Authority/Traverse City Police Department Staff Time, Facilitation Support, Policy Expertise, Funding, Stakeholder Input	Updated policy approved by City of Traverse City Commission. Target completion date: December 2022
Update the Traverse City permit process to create more objective and clearer criteria for the desired number, type, route, and operating hours for pedicab licenses.	City of Traverse City Clerk, Traverse City Police Department	Downtown Development Authority	Businesses, Neighbors, Community	City of Traverse City/Downtown Development Authority/Traverse City Police Department Staff Time, Facilitation Support, Policy Expertise, Funding, Stakeholder Input	Updated policy approved by City of Traverse City Commission. Target completion date: December 2022
Explore creating policy regarding tour bus operations, including potential designated pick-up and drop-off locations and tour operator training.	City of Traverse City Planning Director, City of Traverse City Traffic Committee	Traverse City Police Department, Downtown Development Authority	Businesses, Neighbors, Community	City of Traverse City/Downtown Development Authority/Traverse City Police Department Staff Time, Facilitation Support, Policy Expertise, Funding, Stakeholder Input	Updated policy approved by City of Traverse City Commission

Immediate Action Steps Continued (0-18 months)

Policies, Licensing, and Public Safety Continued					
Action	Responsible	Support	Inform or Consult	Resources Needed	Measure of Success by June 2023
Create and share meaningful public datasets regarding alcohol-related incidents occurring in Traverse City.	Traverse City Police Department		Community	Traverse City Police Department Staff Time	Alcohol-specific datasets available to the public
Continue and increase the presence of the downtown Traverse City police officer(s).	City of Traverse City, Downtown Development Authority	Traverse City Police Department	Businesses, Neighbors, Community	Traverse City Police Department Staff Time, Funding	At least 1 full time employee Traverse City Police Department office staffing downtown
Continue Traverse City law enforcement training in conflict de-escalation.	Traverse City Police Department	Businesses	Downtown Development Authority	Traverse City Police Department and Downtown Development Authority Staff Time, Business Endorsement and Promotion	# trainings held
Identify locations for outdoor lighting along public streets, sidewalks, and alleys in downtown Traverse City.	City of Traverse City Planning Director, Downtown Development Authority, City of Traverse City Department of Public Services, Traverse City Light and Power	Traverse City Police Department	Community	Traverse City Police Department and Traverse City Staff Time, Funding	Locations and cost identified for new lighting, funding secured

Immediate Action Steps Continued (0-18 months)

Policies, Licensing, and Public Safety Continued					
Action	Responsible	Support	Inform or Consult	Resources Needed	Measure of Success by June 2023
Secure funding for video cameras in public spaces in downtown Traverse City, per the existing plan between the Downtown Development Authority and Traverse City Police Department.	City of Traverse City, Downtown Development Authority	Traverse City Police Department	Community	Traverse City Police Department and Traverse City Staff Time, Funding	Funding secured
Training and Education					
Action	Responsible	Support	Inform or Consult	Resources Needed	Measure of Success by June 2023
Consider forming a Responsible Hospitality Council to articulate a vision, reinforce best practices, and support voluntary implementation of best practices by liquor license holders and other businesses. Consider integrating participation with local license approval process.	Businesses	Downtown Development Authority, Traverse City Police Department	MSUE, Existing Hospitality Initiatives	Traverse City Police Department and Downtown Development Authority Staff Time, Facilitation Support, Stakeholder Engagement, Funding, Host Agency or Collaborative	RHC formed with 25%+ of Class C license holders participating
Continue TIPS, TAMS, and ServSafe training and certification for staff and coordinate training approaches between City of Traverse City businesses.	Businesses, Catholic Human Services	Traverse City Police Department, Other Training Providers		Facilitation Support, Standardized Resources	# pilot collaborative trainings held

Immediate Action Steps Continued (0-18 months)

Training and Education Continued					
Action	Responsible	Support	Inform or Consult	Resources Needed	Measure of Success by June 2023
Explore Traverse City tour operator training and certification options and requirements	Businesses	Catholic Human Services, Traverse City Police Department	Training curriculum expert(s)	Policy Expertise, New Training Curriculum	Training requirement incorporated into Traverse City approval process
Community Experience					
Action	Responsible	Support	Inform or Consult	Resources Needed	Measure of Success by June 2023
Coordinate with hospitality and tourism promoters to promote events and experiences in ways that do not center alcohol.	Tourism and Event Promoters, Downtown Traverse City Association	Downtown Development Authority, Traverse City Police Department, Traverse City Tourism, Cherry Festival	Film Festival, Traverse Connect, Local Media, Businesses, Tourism Collaboratives, Value-Added Agriculture	Downtown Development Authority Staff Time, Data: how and how often is alcohol referenced in current event promotions?	TBD
Celebrate craft culture, beer, wine, and spirits.	Tourism and Event Promoters, Businesses, Downtown Traverse City Association	Downtown Development Authority, Cherry Festival, City of Traverse City Tourism	Film Festival, Traverse Connect, Media, Businesses, Tourism Collaboratives, Value-Added Agriculture	Downtown Development Authority Staff Time, Data: how and how often is craft culture referenced in current City of Traverse City promotions?	TBD
Encourage Traverse City businesses to include more non-alcoholic craft beverages alongside alcoholic beverages offered.	Businesses	Downtown Development Authority, Downtown Traverse City Association	Traverse City Police Department, Cherry Festival	Downtown Development Authority Staff Time, Data: how many license holders offer non-alcoholic craft beverages currently?	

Immediate Action Steps Continued (0-18 months)

Community Experience Continued					
Action	Responsible	Support	Inform or Consult	Resources Needed	Measure of Success by June 2023
Encourage Traverse City businesses to promote available transportation choices to customers. Specific action steps at the entity level may include improved marketing, signage, or promotional use incentives.	Downtown Development Authority, Bay Area Transportation Authority	Businesses	Traverse City Police Department	Downtown Development Authority and BATA Staff Time, Transportation choices education	TBD
Improve signage and marketing materials to communicate the availability of overnight parking in downtown parking lots.	Downtown Development Authority	Traverse City, Traverse City Police Department	Businesses, Neighbors, Community	Downtown Development Authority/Traverse City/Traverse City Police Department Staff Time, New signage	Pilot signage installed in lots T, V, and P.

Short-Term Action Steps (1-3 years)

Policies, Licensing, and Public Safety					
Action	Responsible	Support	Inform or Consult	Resources Needed	Measure of Success by December 2024
Update Traverse City permit process to create more objective and clearer criteria for the desired number, type, and location of outdoor events on city property.	City of Traverse City Clerk, Traverse City Police Department	Downtown Development Authority	Event Managers, Businesses, Neighbors, Community	City of Traverse City/Downtown Development Authority, Traverse City Police Department Staff Time, Facilitation Support, Policy Expertise, Funding, Stakeholder Input	Updated policy approved by City of Traverse City Commission

Short-Term Action Steps Continued (1-3 years)

Policies, Licensing, and Public Safety					
Action	Responsible	Support	Inform or Consult	Resources Needed	Measure of Success by December 2024
Assess Traverse City ordinances such as those governing noise, or other substances such as marijuana or smoking downtown, to address alignment with drinking culture vision and goals.	City of Traverse City Planning Director, City of Traverse City Clerk	Traverse City Police Department, Downtown Development Authority	Businesses, Neighbors, Community	City of Traverse City/Downtown Development Authority, Traverse City Police Department Staff Time, Facilitation Support, Policy Expertise, Funding, Stakeholder Input	Updated policy approved by City of Traverse City Commission
With updated Traverse City policies and processes in place, continue to assess needs and invest in law enforcement capacity.	City of Traverse City	Traverse City Police Department	Downtown Development Authority, Community	Traverse City Police Department and City of Traverse City staff Time, Funding for drunk driving enforcement, understanding of Grand Traverse County Health Department role in enforcement	Increased # of Traverse City Police Department full-time employees
Recognizing that the Traverse City drinking culture impacts and is impacted by surrounding public, for-profit, and nonprofit activities, build relationships with regional public and private sector stakeholders and look for opportunities to work together to foster a healthy drinking culture in lower Northern Michigan.	City of Traverse City, Downtown Development Authority, Traverse City Police Department		Regional drinking culture stakeholders, including Wineries of Old Mission Peninsula, Grand Traverse County Sheriff's Office, Traverse Wine Coast.	Downtown Development Authority, City of Traverse City, Traverse City Police Department Staff Time, Partnership Facilitation & Development	TBD
Install outdoor lighting along public streets, sidewalks, and alleys in downtown Traverse City.	City of Traverse City Planning Director, Downtown Development Authority, City of Traverse City Department of Public Services, Traverse City Light and Power	Traverse City Police Department	Community	Traverse City Police Department and City of Traverse City Staff Time, Funding	Lighting installed

Short-Term Action Steps Continued (1-3 years)

Policies, Licensing, and Public Safety Continued					
Action	Responsible	Support	Inform or Consult	Resources Needed	Measure of Success by December 2024
Install video cameras in public spaces in downtown Traverse City, per the existing plan between the Downtown Development Authority and Traverse City Police Department.	City of Traverse City, Downtown Development Authority	Traverse City Police Department	Community	Traverse City Police Department and City of Traverse City Staff Time, Funding	Cameras installed

Short-Term Action Steps Continued (1-3 years)

Training and Education					
Action	Responsible	Support	Inform or Consult	Resources Needed	Measure of Success by December 2024
With Responsible Hospitality Council (or similar model) in place, • Work with businesses where negative impacts are occurring, including asking these businesses what they need to achieve shared community goals for a healthier drinking culture. • Encourage Traverse City businesses to create customer-focused education and outreach that promotes personal responsibility and accountability, and a sense of community. • Provide access to existing private and public sector resources that are greater than what one small business can offer, including the systematic promotion of available health and wellness services and social activities and places to gather after-hours without alcohol (for employees).	Businesses	Downtown Development Authority, Traverse City Tourism	Traverse Connect, Businesses, Alcohol Prevention Agencies	Traverse City Police Department and Downtown Development Authority Staff Time, Facilitation Support, Stakeholder Engagement, Funding, Host Agency or Collaborative	TBD

Long-Term Action Steps (4-5 years)

Community Experience					
Action	Responsible	Supporting	Inform or Consult	Resources Needed	Measure of Success by December 2026
Explore the feasibility of offering more transportation options that support the Healthier Drinking Culture vision, including: Late evening public and private transportation service options. Affordable and accessible transportation options for those traveling to and from areas outside the downtown.	Private	Downtown	Traverse City Police Department	Data, Feasibility Study	

Tools and Resources

2019 Community Health Assessment

Northwest Michigan Community Health Innovation Region
[2019 Community Health Assessment](#)

Good Neighbor Plan Policy

[Recreational Cannabis Good Neighbor Plan](#)
Grand Rapids, MI

Better Drinking Culture Initiative

[Better Drinking Culture](#)
Grand Rapids, MI

10 Areas Governments Could Work with to Reduce the Harmful Use of Alcohol

World Health Organization Newsletter, 2019
[10 areas governments could work with to reduce the harmful use of alcohol](#)

Reducing Underage Drinking: A Collective Responsibility

National Research Council and Institute of Medicine, 2004
[Chapter 11: Communities](#)

Center for Disease Control

[Guide for Measuring Alcohol Outlet Density](#)

Michigan Department of Licensing and Regulatory Affairs

[Michigan Liquor License Definitions](#)

Michigan Liquor Control Commission

[Retail Liquor License Descriptions](#)

To: Jean Derenzy, CEO
Traverse City Downtown Development Authority

From: Suzanne Schulz, AICP
Urban Planning Practice Leader

Date: September 9, 2021

Re: **East Front Street and Downtown Circulation Study Project Updates**

Summary

During the past month the consultant team has been combining the results of the community survey and the input received during the community listening sessions on August 9th and 10th. A lot of great dialogue occurred over the course of the two days in meetings. One common point of agreement was the need to prioritize the pedestrian in design. Discussions varied regarding parking and bicycles. The input received has provided a very solid foundation for the next phases of project design and dialogue for East Front Street and the Circulation Study.

Survey

The community survey was closed on August 30th with 535 responses. The results with the total numbers were similar to the initial results that came in during our last community input session with stakeholders in early August. This consistency in data has further validated the input received. The survey results will be presented at our next series of meetings scheduled for September 27th and virtual town halls on September 29th.

A new survey will be created and distributed by September 27th to gain additional stakeholder input on the concepts presented. The survey would then close in mid-October so the results can be shared with the DDA and City. Based upon all community input, Progressive AE (PAE) will provide a summary of the pros and cons of each design including budgetary costs. The DDA and the City will need to provide direction to PAE on which design to bring to the preliminary plan stage by the end of October to keep the project on schedule for winter bidding and potentially spring of 2022 construction.

East Front Street

Our design team is in full swing preparing 3 concepts based upon the aggregation of prior studies, stakeholder input, survey responses, and current engineering standards. Snowmelt and lighting are also being evaluated at a high level for every potential concept. Each concept has a specific focus based upon information collected:

- Pedestrian focused – maximizes pedestrian space and preserves parallel parking
- Bicycle focused – cycle track on north side, parallel parking remains on south side.

- Pedestrian Flex option – maximized pedestrian space and provides options for parklets in key areas to support outdoor business operations in the summer months in parallel parking spaces.

These concepts will be presented to stakeholder groups and via virtual town halls in greater detail with budgetary cost estimates to achieve each concept.

Hubbell, Roth, & Clark has been completing preliminary watermain and sanitary sewer design for the project. The consulting teams are working together closely to coordinate locations of improvements to ensure utility operations are not impacted by the streetscape concepts.

Progressive AE continues to facilitate conversations and sharing of design concepts with MDOT as to how the Grandview Parkway Improvements slated for 2023 interface with the East Front Street project. The intersection of Front Street, Grandview Parkway, and Tart Trails all in one location with abnormal geometry provides many challenges. All parties understand the criticality of getting the design right within the constraints of geometric safety and property boundaries to improve the area for many years to come. Design concepts were shared between MDOT and the East Front Street team on September 8th with desire to review the ideas in 2-3 weeks.

Circulation Study

Traffic counts to inform traffic modeling were collected in late July. The traffic model was built and refined in August to evaluate circulation options. The analysis from the model data is happening now. High level findings will be presented to the stakeholder team and at the virtual town hall in time for the late September meetings.

Action

No Board action is requested at this time. However, direction on a desired East Front Street concept to pursue will be needed at the October DDA meeting based upon the concepts, input, and supporting information presented ahead of that meeting.

P:\191370001\Meetings\DDA Memo 9-9-21.docx



Downtown Development Authority
303 E. State Street
Traverse City, MI 49684
jean@downtowntc.com
231-922-2050

Memorandum

To: Downtown Development Authority Board

From: Jean Derenzy, DDA CEO

Date: September 13, 2021

Subject: Downtown Tree Management Plan

As you recall, last winter, the DDA hired the Davey Resource Group to develop a Tree Management Plan for Downtown Traverse City. The intent of the plan was to build upon the 2018 city-wide *Urban Canopy Assessment and Management (UCAM) Plan* for street trees with a more detailed and focused approach for tree management in Downtown.

The Final Downtown Tree Management is now complete (and is included in your packet). The Tree Management Plan is organized into three sections:

- An updated downtown street and park tree inventory
- A four-year tree planting and maintenance program, with specific activities
- Considerations for tree planting, including community preferences as well as tools and strategies.

Many of the findings of the tree inventory were outlined and discussed at your March board meeting. In short, the inventory found that:

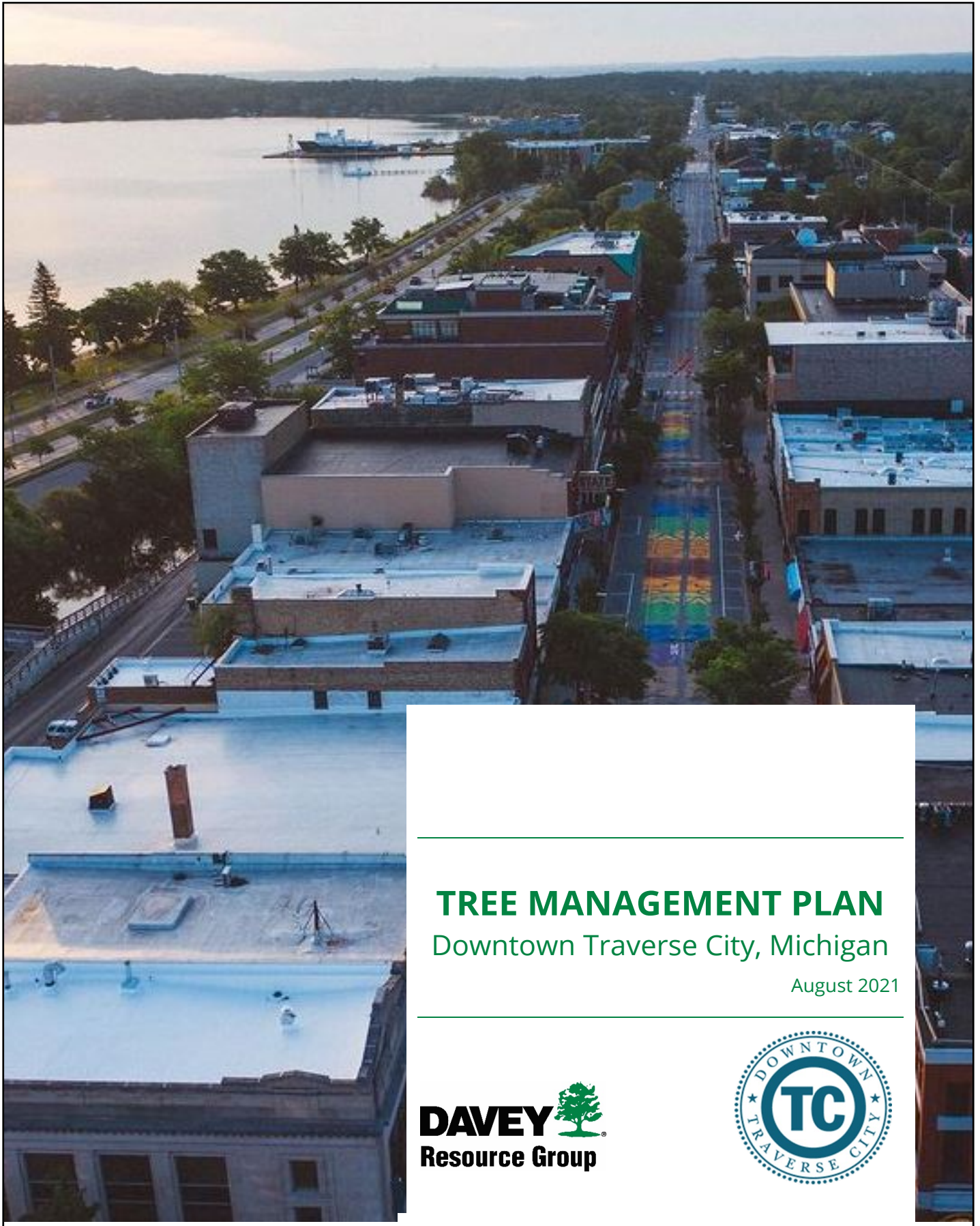
- There is an above industry standard percentage of a single species (callery pear),
- There are 25 vacant tree planting locations, 8 stumps (some of which are visible) and 52 suggested tree removals (dead or dying trees) within the downtown.

At this time, the DPW does not have the capacity or resources to assist with tree plantings this fall. Therefore, we are working to secure cost estimates to plant roughly a dozen trees in the "vacant tree" locations identified in the assessment this fall.

We will be meeting with the City's DPW department over the next several months to discuss opportunities for long-term collaboration for tree planting and maintenance – including efforts to remove stumps/dead trees and replanting roughly 60 sites next spring.

RECOMMENDATION

That the DDA Board approves the 2021 Tree Management Plan for Downtown Traverse City and supports efforts to work with the city to facilitate a planting and maintenance program that properly addresses trees with the downtown district.



TREE MANAGEMENT PLAN

Downtown Traverse City, Michigan

August 2021



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Notice of Disclaimer: Inventory data provided by Davey Resource Group, Inc. "DRG" are based on visual recording at the time of inspection. Visual records do not include individual testing or analysis, nor do they include aerial or subterranean inspection. DRG is not responsible for the discovery or identification of hidden or otherwise non-observable hazards. Records may not remain accurate after inspection due to the variable deterioration of inventoried material. DRG provides no warranty with respect to the fitness of the urban forest for any use or purpose whatsoever. Clients may choose to accept or disregard DRG's recommendations or to seek additional advice. Important: know and understand that visual inspection is confined to the designated subject tree(s) and that the inspections for this project are performed in the interest of facts of the tree(s) without prejudice to or for any other service or any interested party.

INTRODUCTION

The **2021 Downtown Traverse City Tree Management Plan** is a supplement to the *2018 Traverse City Tree Management Plan and Urban Tree Canopy Assessment*, completed by Davey Resource Group, Inc. (DRG). The **2021 Downtown Plan**, funded and supported by the Traverse City Downtown Development Authority (DDA), focuses on the specific maintenance and management needs of the public trees, stumps, and planting sites within the **DDA District**.

The planning process included:

- **Tree inventory update** of the public street and park trees within the Traverse City DDA District.
- **Tree management plan** detailing recommended maintenance activities for the DDA District, including timing, and estimated costs based on the updated tree street and park tree inventory.
- **Outreach and engagement** to understand the Traverse City community's values and preferences related to trees and streetscapes in the DDA District.

The Plan is organized into three sections:

Section 1: Tree Inventory Summary presents data from the updated Downtown street and park tree inventory to understand the current state of downtown Traverse City's tree population.

Section 2: Tree Management Program details recommended tree maintenance activities based on the updated street and park tree inventory for Downtown Traverse City. It includes a four-year tree maintenance program with budget table estimating costs per year.

Section 3: Tree Planting in Downtown Traverse City provides considerations, tools, and strategies for planting downtown. This section includes a summary of community themes and priorities that emerged during the project's community engagement activities.



A close-up photograph of green oak leaves with prominent veins and serrated edges, filling the background of the page.

Section 1:

Tree Inventory Summary

SECTION 1: TREE INVENTORY SUMMARY

In February 2021 Davey Resource Group, inc. (DRG) conducted a tree inventory update of the trees within the Traverse City DDA District. Data was collected on trees, stumps, and planting sites in the street right-of-way (ROW) and in Clinch Park, Hannah Park, Lay Park, Mini Park, Union Street Dam Park, Wellington Plaza, and West End Beach.

A total of 1,146 sites were collected (Figure 1):

- 96% the sites collected are trees.
- 3% are vacant planting sites.
- 1% are stumps.

Note: 7 sites were determined to be unplantable and are not included in the tree inventory summary data.

See Appendix A for details about DRG's methodology for collecting site data.

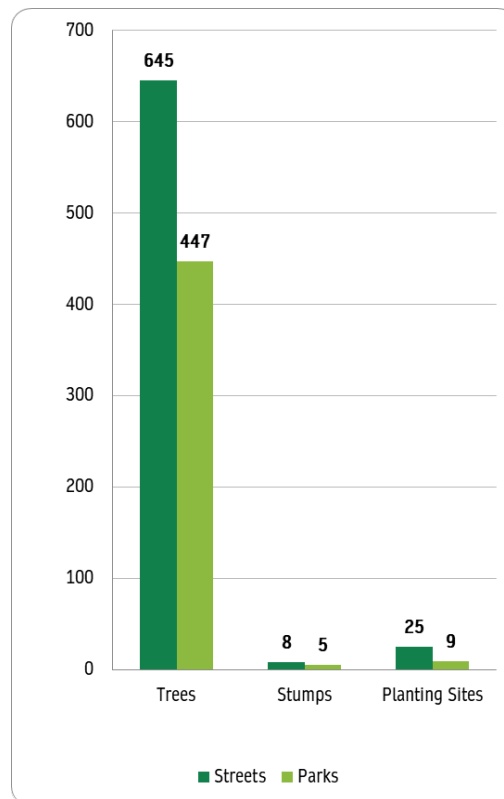


Figure 1. Number of inventoried sites by location and type.

SPECIES, GENUS, AND FAMILY DISTRIBUTION

Species and genus diversity, or the variety of trees growing in a community, is crucial for ensuring that Downtown Traverse City's trees are resilient to invasive pests and diseases. The 10-20-30 rule is a common urban forestry industry recommendation for tree species, genus, and family distribution (Santamour 1990). The rule states that a single species should not represent more than 10% of the public tree population, a single genus no more than 20%, and a single family no more than 30%. Even when the 10-20-30 standard is met, it is important for community planting plans to continue to prioritize diversity by including species, genera, and families that are less represented in the population to ensure future diversity.

Population Distribution

Figure 2 shows the most abundant species in Downtown Traverse City's inventoried tree population using the 10% species rule. Callery Pear (*Pyrus calleryana*) at 29% of the population is well above the 10% rule. Norway maple (*Acer platanoides*, 7%) and sugar maple (*Acer saccharum*, 5%) do not exceed the recommended species threshold but contribute to a greater abundance of maple (*Acer*) in the genus distribution [discussed next](#). Littleleaf linden (*Tilia cordata*, 5%) and Honeylocust (*Gleditsia triacanthos*, 4%) are both below the 10% species threshold. Table 1 shows the top 10 species growing in Downtown Traverse City's streets and parks.

RESILIENCE THROUGH DIVERSITY

The Dutch elm disease epidemic of the 1930s provides a key historical lesson on the importance of diversity (Karnosky 1979). The disease killed millions of American elm trees, leaving behind enormous gaps in the urban canopy of many Midwestern and Northeastern communities. In the aftermath, ash trees became popular replacements and were heavily planted along city streets. History repeated itself in 2002 with the introduction of the emerald ash borer into America. This invasive beetle devastated ash tree populations across the Midwest. Other invasive pests spreading across the country threaten urban forests, so it is vital that we learn from history and plant a wider variety of tree genera to develop a resilient inventoried tree resource.



Ash tree with emergence hole from emerald ash borer.

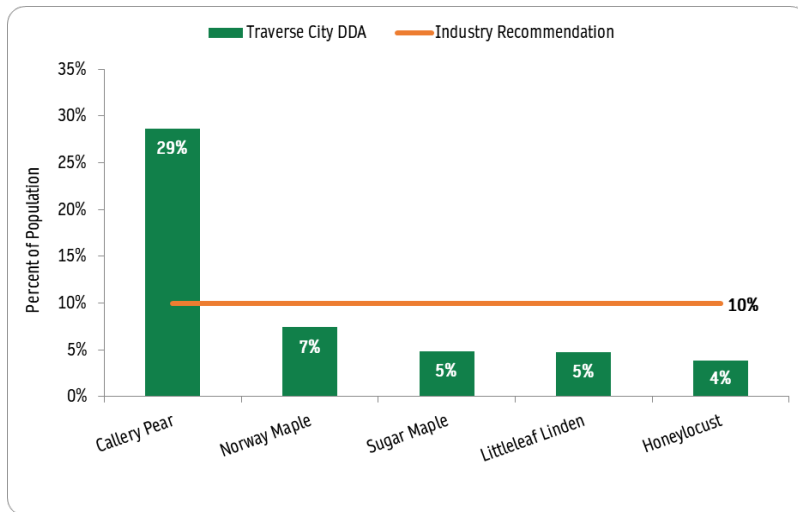


Figure 2. Species distribution of Downtown Traverse City's inventoried public trees

Common Name	Latin Name	# of Trees
Callery Pear	<i>Pyrus calleryana</i>	313
Norway Maple	<i>Acer platanoides</i>	81
Sugar Maple	<i>Acer saccharum</i>	53
Littleleaf Linden	<i>Tilia cordata</i>	52
Honeylocust	<i>Gleditsia triacanthos</i>	42
Red Pine	<i>Pinus resinosa</i>	38
Japanese Tree Lilac	<i>Syringa reticulata</i>	37
Apple sp.	<i>Malus spp.</i>	34
Quaking Aspen	<i>Populus tremuloides</i>	29
Common Chokecherry	<i>Prunus virginiana</i>	26

Table 1. Top 10 Street and Park Trees in the DDA District

Genus (genera) is a group of tree species that have the same primary traits in common – for example the species red maple (*Acer rubrum*), sugar maple (*Acer saccharum*), and silver maple (*Acer saccharinum*) all belong the genus maple (*Acer*). **Figure 3** details the most abundant genera in Downtown Traverse City’s inventoried tree population compared to the 20% recommended genus rule. The only genus that has a population above the 20% threshold is pear (*Pyrus*) at 30%.

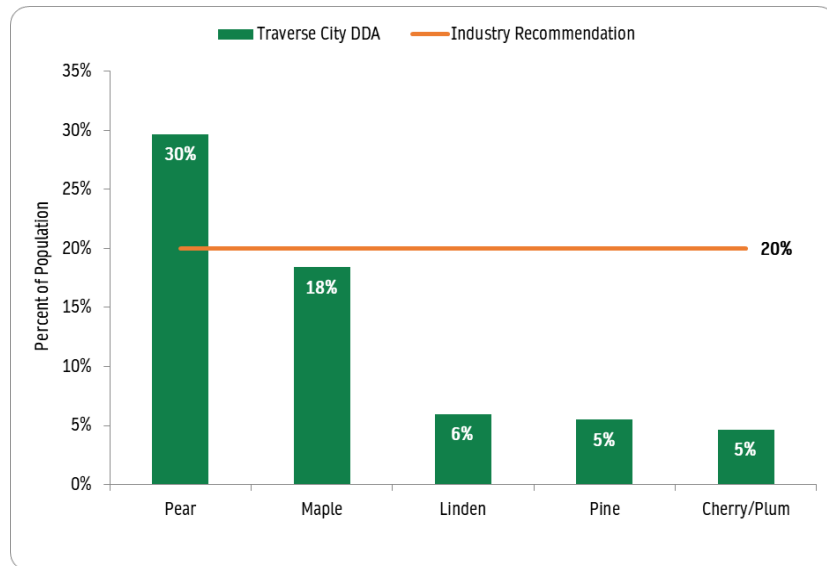


Figure 3. Genus distribution of Downtown Traverse City’s inventoried public trees.

CONDITION

The condition of each inventoried tree was rated by an International Society of Arboriculture (ISA) Certified Arborist as Good, Fair, Poor, or Dead. Factors including root characteristics, branch structure, trunk, canopy, foliage condition, and the presence of pests, were considered when assigning a condition rating for each tree. The general health of the inventoried street and park tree population is characterized by the most prevalent condition rating assigned during the inventory.

As **Figure 4** shows most of the inventoried trees are in Fair condition (57%), while 29% are in Good condition, and 14% are in Poor or Dead condition. With 86% of the tree population having a condition rating of Fair or better **the overall condition of Downtown Traverse City's inventoried trees is Fair.**

Common reasons that young trees were rated in Poor condition are structural defects that can be corrected by training, mechanical damage from weed whips and lawnmowers that could have been avoided, and improper planting with the root flare too high or below the soil surface.

Poor condition ratings among mature trees are generally based on significant signs of decline including, dieback of primary leaders and decay. Trees in Poor condition with dieback and/or decay that is not too extensive can often be pruned to correct these defects. These trees should be monitored routinely and if their condition continues to decline removal may be the best option for mitigating risk.

Because mature trees provide exponentially more benefits than young trees it may be worthwhile to maintain overmature trees in that show signs of being able to endure for several more years. While maintaining these large trees might be costly, the annual value of the benefits they provide should be considered when removal has not yet been recommended by an ISA Certified Arborist. The health of some trees in Poor condition is unlikely to improve even with intensive maintenance and removal is recommended as the most cost-effective option for mitigating risk.

The condition of Downtown Traverse City's inventoried trees can be improved over time by following the proactive maintenance recommendations in Section 2. Among the **most important is structural pruning, or training, of young trees and routine pruning of established, maturing, and mature trees.** Both maintenance activities are important for correcting defects that could worsen over time and to mitigate risk concerns. All pruning should be specified and performed according to ANSI A300 (Part 1) standards (American National Standards Institute, 2017).

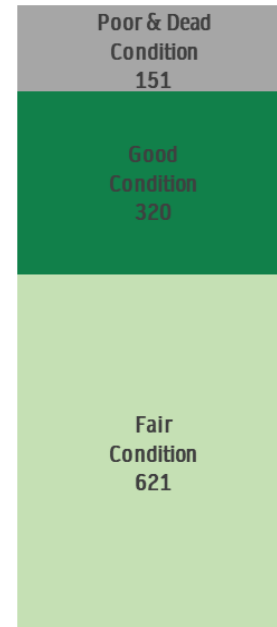


Figure 4. Condition distribution of Downtown Traverse City's inventoried public trees

RELATIVE AGE DISTRIBUTION

Analysis of a tree population's relative age distribution is performed by assigning age classes to size classes. Specific tree age cannot be determined from diameter size class alone because many factors affect tree lifespan and growth rate such as species, soil conditions, and climate, but it is still useful to generalize size classes into relative age classes because of the insight it gives to managing the inventoried tree resource.

The inventoried tree population is grouped into the following relative age classes: young trees 0–8 inches diameter at breast height (DBH), established trees 9–17 inches DBH, maturing trees 18–24 inches DBH, and mature trees greater than 24 inches DBH. These size classes were chosen to allow the inventoried tree population to be compared to an ideal relative age distribution recommended by Richards, which holds that the largest proportion of a tree population (approximately 40%) should be young trees while the smallest proportion (approximately 10%) should be mature trees (Richards 1983).

A tree population within Richards' ideal relative age distribution provides enough social, economic, and environmental benefits that their annual value is generally greater than the cost of maintaining them. **Figure 5** compares the relative age distribution of Downtown Traverse City's inventoried tree population to Richards' ideal distribution.

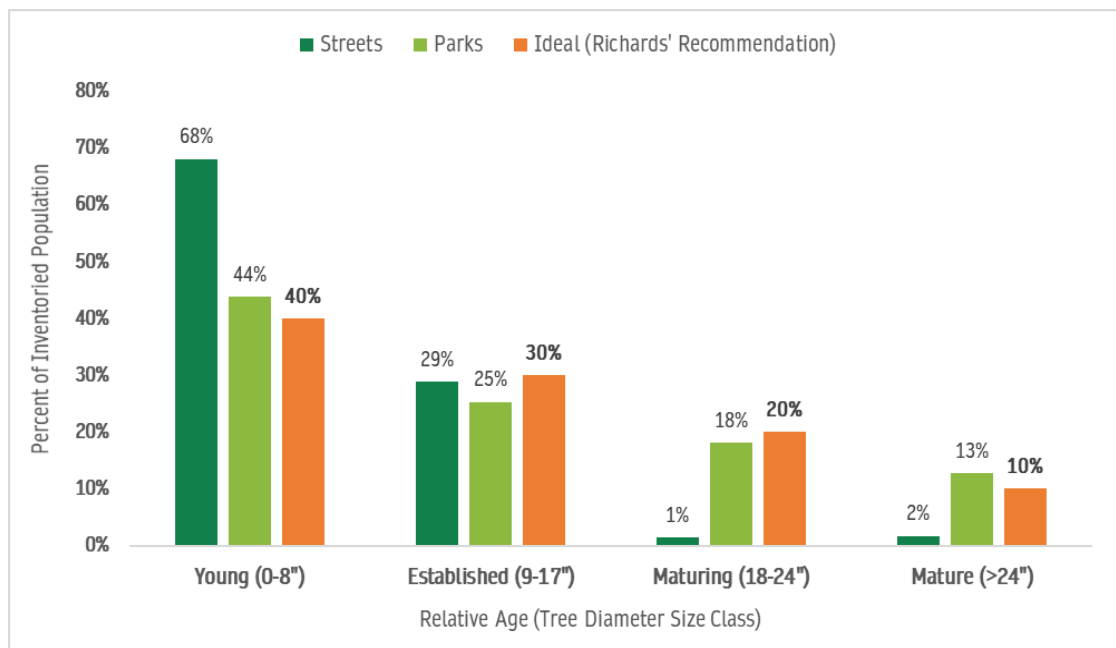


Figure 5. Relative age distribution of Downtown Traverse City's inventoried public trees compared to Richards' recommended ideal age distribution.

As seen in Figure 5, Downtown's park trees are trending toward Richards' ideal, however, the street tree population is trending young, **with 68% of the population in the young (small) tree** category. With the potential that many trees could reach maturity at the same time, there is a risk that canopy cover will be impacted as these trees die and are removed.

To maintain a sustainable urban forest, it is important to have a mix of size/age classes to prevent a significant loss in tree canopy cover. To ensure there is an adequate mix of size/age classes:

- the preservation and care of mature trees should be prioritized to prevent loss of current tree canopy.
- new trees, especially those with large canopies at maturity, should be planted to replace old, dying, dead trees.
- structural of young and established trees should be conducted to ensure there are trees to replace maturing and mature trees.

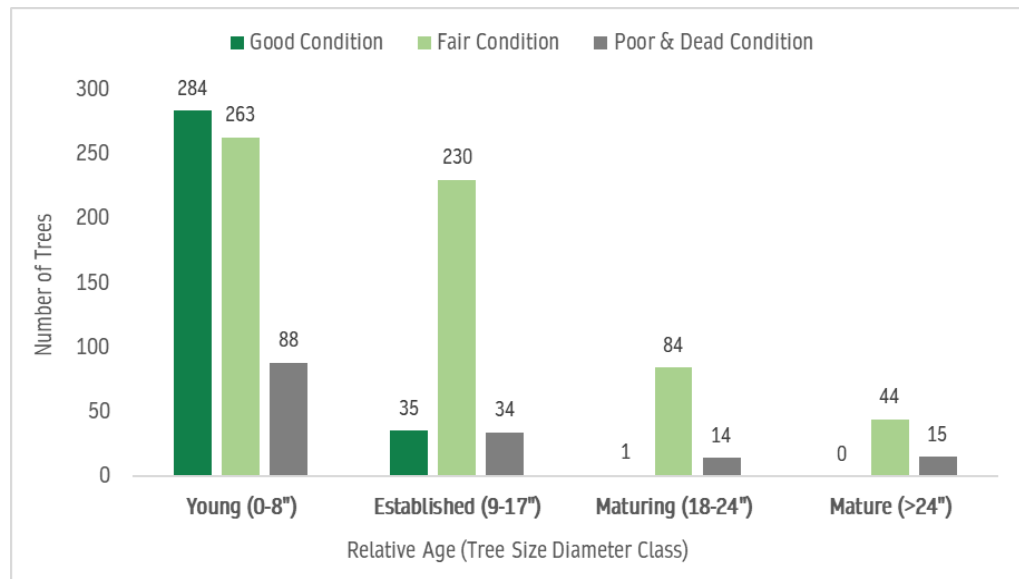


Figure 6. Condition by relative age class of Downtown Traverse City's inventoried public trees

Figure 6 cross-analyzes the condition of Downtown Traverse City's inventoried tree population with its relative age distribution. The **greatest proportion of trees in each age class are in Fair condition except for the young age class**. The proportion of the tree population in Good condition decreases sharply between the young and established age classes then continues decreasing in the mature and maturing age classes. **This trend emphasizes the importance of training and inspecting trees while they are young to improve their structure and address any issues that may lead to declining condition as they age.** Not only will this improve the

condition of trees as they mature, but it is far more cost effective to train young and established trees than it is to prune mature and maturing trees. The effort expended on training trees not only promotes a longer healthy life for Downtown Traverse City's public trees, but also reduces the number of large tree removals that could have been avoided by correcting structural defects or noting nonviable trees so they can be easily removed while they are still small.

BENEFITS OF TREES

Environmental Benefits

- Trees cast shade and act as windbreaks, decreasing energy use and moderating local climates.
- Trees help slow and reduce the amount of stormwater runoff that reaches storm drains, rivers, and lakes. The crowns of 100 mature trees intercept roughly 100,000 gallons of rainfall per year (U.S. Forest Service 2003a).
- Trees help reduce noise levels, remove atmospheric pollutants, produce oxygen, and absorb carbon dioxide.
- Trees can reduce street-level air pollution by up to 60% (Coder 1996). Lovasi (2008) suggested that children who live on tree-lined streets have lower rates of asthma.
- Trees stabilize soil and provide habitat to wildlife.

Economic Benefits

- When trees are on the property, residential property values and commercial property rental rates are an average of 7% higher (Wolf 2007).
- Trees moderate temperatures in the summer and winter, saving on heating and cooling expenses (North Carolina State University 2012, Heisler 1986).
- On average, consumers will pay about 11% more for goods in landscaped areas, with this figure being as high as 50% for convenience goods (Wolf 1998b, Wolf 1999, and Wolf 2003).
- Consumers also feel that the quality of products is better in business districts surrounded by trees than those considered barren (Wolf 1998b).
- The quality of landscaping along the routes leading to business districts had a positive influence on consumers' perceptions of the area (Wolf 2000).

Social Benefits

- Tree-lined streets are safer; traffic speeds and the amount of stress drivers feel are reduced, which likely reduces road rage/aggressive driving (Wolf 1998a, Kuo and Sullivan 2001a).
- Chicago apartment buildings with medium amounts of greenery had 42% fewer crimes than those without any trees (Kuo and Sullivan 2001b).
- Chicago apartment buildings with high levels of greenery had 52% fewer crimes than those without any trees (Kuo and Sullivan 2001a).
- Employees who see trees from their desks experience 23% less sick time and report greater job satisfaction than those who do not (Wolf 1998a).
- Hospital patients recovering from surgery who had a view of a grove of trees through their windows required fewer pain relievers, experienced fewer complications, and left the hospital sooner than similar patients who had a view of a brick wall (Ulrich 1984, 1986).

TREEKEEPER BENEFITS ANALYSIS

TreeKeeper® is DRG's tree inventory management software utility that models the monetary value of benefits provided by individual trees, groups of trees, or an entire tree population. Using tree inventory data i-Tree Streets analyzes the inventoried tree population's size, structure, overall condition, and species composition to estimate the value of the environmental services performed by trees, including intercepting rainfall, reducing carbon dioxide (CO₂) emissions, and removing atmospheric pollutants (see Appendix B for details about i-Tree Streets benefits methodology).

ENERGY AND PROPERTY BENEFITS

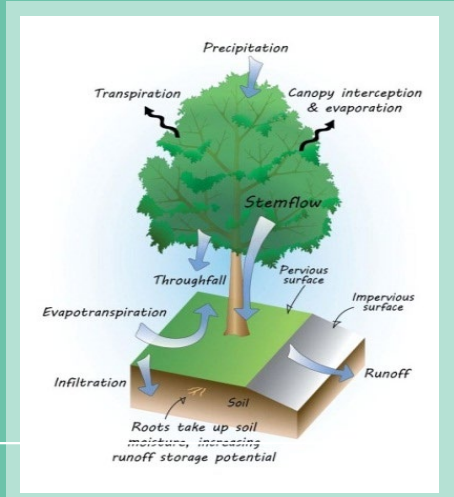
Downtown Traverse City's inventoried street and park trees helps conserve 107,636 kWh and 15,268 therms in energy usage each year by shielding buildings from temperature extremes caused by sun, wind, and precipitation. The total estimated value of these energy savings is \$23,132.

Properties with trees have also been found to have higher property values, and the value of this benefit increases as trees and their canopies grow. Downtown Traverse City's inventoried tree population has an estimated property benefit of \$26,738.

AVOIDING AND SEQUESTERING CARBON

Carbon dioxide (CO₂), the primary greenhouse gas driving climate change has negative impacts on people, infrastructure, and the environment. Trees act as carbon sinks by absorbing carbon emitted by automobiles, power plants, and other sources during photosynthesis and storing it in their tissue as they grow, which decreases the amount of carbon in the atmosphere. i-Tree Streets models the total carbon sequestered (absorbed) by inventoried tree populations each year using simulated growth rates for each species. The 141,051 lbs. of CO₂ avoided by having trees in the urban landscape and the 161,075 lbs. of CO₂ sequestered annually by Downtown Traverse City's inventoried tree

TREE BENEFITS



Trees perform many environmental services and provide many benefits simply by existing, including:

- Catching rainfall in the canopy so it drips to the ground with less of an impact or flows down their trunk into the soil.
- Helping stormwater soak into the ground by slowing runoff.
- Helping stormwater move through the soil by creating more pore space with their roots.
- Cooling the surrounding landscape by casting shade with their canopy and releasing water from their leaves.
- Catching airborne pollutants on their leaves and holding them until they wash off in the rain.
- Transforming some pollutants into less harmful substances and preventing some pollutants from forming.

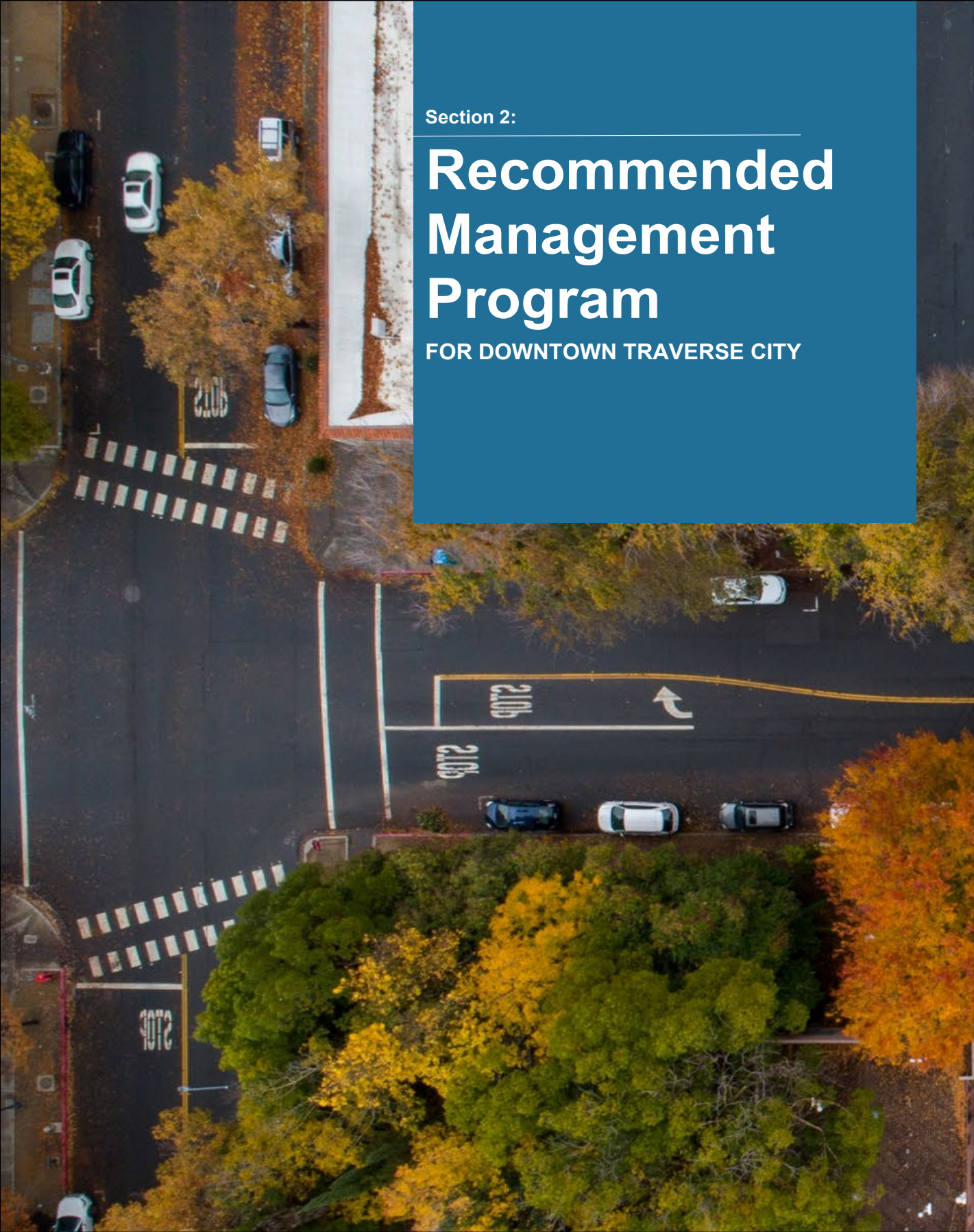
population have a total estimated annual value of \$2,194.

CONTROLLING STORMWATER

Trees intercept rainfall with their leaves and branches reducing run-off and helping lower stormwater management. Avoided stormwater runoff reduces the risk of flooding and combined sewer overflow, both of which impact people, infrastructure, and water quality. The 751,894 gallons of stormwater runoff intercepted by Downtown Traverse City's inventoried trees each year has an estimated total value of \$20,376.

IMPROVING AIR QUALITY

Compared to rural landscapes, urban landscapes are characterized by higher emissions from automobiles, industry, and other sources in a relatively small area. The total weight of sulfur dioxide (SO₂), carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), and particulate matter (PM₁₀) removed from the air by the inventoried tree population is 988 lbs. The health consequences avoided by the City of Downtown Traverse City's residents has an estimated value of \$3,080.

An aerial photograph of a city street intersection. The street is paved with asphalt and has white lane markings, including a crosswalk and a right-turn arrow. Several cars are visible on the street. The surrounding area is filled with trees showing vibrant autumn foliage in shades of yellow, orange, and green. A large blue rectangular overlay covers the top right portion of the image, containing white text.

Section 2:

Recommended Management Program

FOR DOWNTOWN TRAVERSE CITY

Summary of Recommended Tree Maintenance



Tree & Stump Removal

Trees designated for removal have defects that cannot be cost-effectively or practically corrected. Most of the trees in this category have a large percentage of dead crown.

Total = 81 trees
High Risk = 0 trees
Moderate Risk = 23 trees
Low Risk = 58 trees
Stumps = 13



Priority Pruning

Priority pruning removes defects such as Dead and Dying Parts or Broken and/or Hanging Branches. Pruning the defected branch(es) can lower risk associated with the tree while promoting healthy growth.

Total = 9 trees
High Risk = 1 tree
Moderate Risk = 8 trees



3-Year Routine Pruning

Over time, routine pruning of Low-Risk trees can minimize reactive maintenance, limit instances of elevated risk, and provide the basis for a robust risk management program.

Total = 524 trees
Number in cycle each year = 174 trees (minimum)



3-Year Tree Training Cycle

Young trees can have branch structures that lead to potential problems as the tree ages, requiring training to ensure healthy growth. Training is completed from the ground with a handsaw, pole pruner or pruning shear.

Total = 532 trees
Number in cycle each year = 177 trees (minimum)



Tree Planting

Planting new trees to replace trees removed and in areas with low tree canopy cover in areas helps ensure that tree benefits are distributed evenly across the city.

19 small vacant street sites
5 medium vacant street sites
1 large vacant street sites
60 replacements after street tree and stump removals



Routine Tree Inspection

Routine inspections are essential to identifying potential tree problems. Inspections should be performed by a qualified arborist who is trained in the art and science of planting, caring for, and maintaining trees.

Drive-by assessments each year = 878 trees (minimum)
Walk-by assessment each year = 219 trees (minimum)

SECTION 2: DOWNTOWN TREE MANAGEMENT PROGRAM

RECOMMENDED APPROACH TO TREE MANAGEMENT

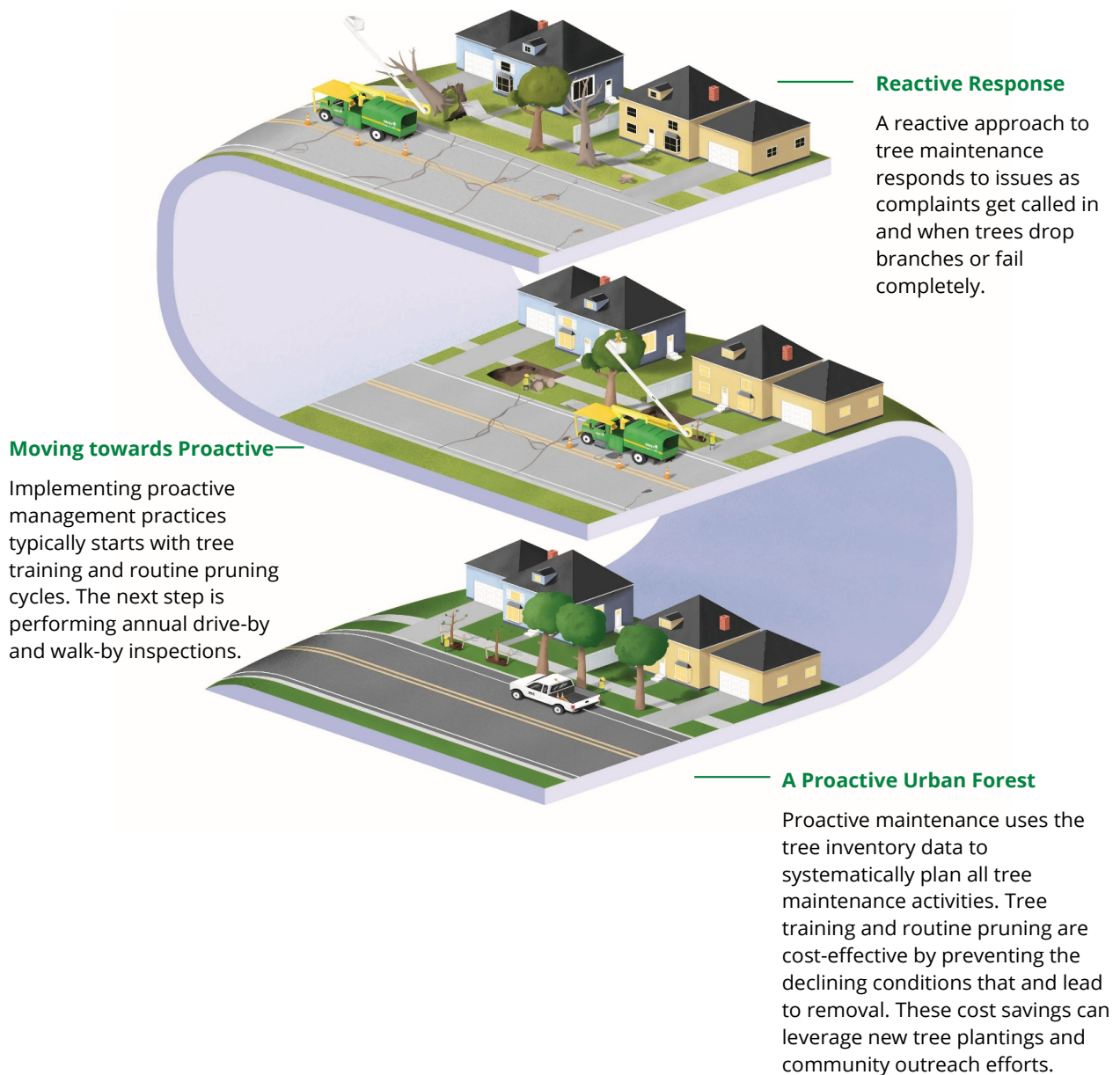
An effective approach to managing public trees is to follow a proactive and systematic program that sets clear and realistic goals, prescribes future action, and periodically measures progress. A robust urban forestry program establishes tree maintenance priorities and utilizes tools including a tree inventory and asset management software system with geographic data functionality (e.g., TreeKeeper®).

The management program for the Downtown District's trees includes a four-year maintenance schedule based on data from the updated street and park tree inventory. The schedule details the recommended tasks to complete each year along with estimated costs. To prioritize tree maintenance activities, the inventory includes a Risk Rating and a recommended maintenance activity for each tree. **The recommended maintenance activities for all trees with a High or Moderate Risk Rating are prioritized first before shifting to proactive, routine tree maintenance.** While large short-term expenditures may be required to address these trees, it is important to secure the funding needed to complete high priority tree maintenance as soon as possible, to promote public safety and reduce long-term costs.



FROM REACTIVE TO PROACTIVE TREE MAINTENANCE

Trees require routine attention and upkeep to maximize the benefits they provide to Downtown Traverse City's residents, businesses, and visitors. Many communities find themselves following a reactive approach to maintaining their public trees. A program based on regular tree assessments, updated inventory data, and routine maintenance of public trees prevents common issues before they arise—saving time and money and freeing it to be spent elsewhere within the urban forestry program.



RECOMMENDED MAINTENANCE BY RISK RATING

Trees fail from natural causes such as diseases, insects, and weather conditions as well as from physical injury due to vehicles, vandalism, and root disturbances. While trees that decline into Poor condition may have defects that are cost-effective to prevent, they often have defects that cannot be cost-effectively corrected and can pose a risk to people and property. Trees should be removed when corrective pruning, or plant health care will not adequately mitigate risk or would be cost-prohibitive. DRG recommends completing maintenance for all High Risk trees as soon as possible. Maintenance activities for Moderate Risk trees can then be systematically addressed depending on a given tree's location, its particular defects, and risk tolerance.

Low is the lowest category of Risk Rating. Barring tree removal, there is no feasible way to reduce a tree's Risk Rating below Low. Low Risk recommended maintenance activities should be prioritized based on how that fit within Downtown Traverse City's priorities such as tree aesthetics, tree longevity, or when the possible consequences of a particular tree or tree part failing are unacceptably high.

Important Note: Proactively training and pruning trees on routine cycles can reduce management costs over time by correcting issues early, improving tree condition, and increasing longevity.

Removal Recommendations

Shown in **Figure 7**, Downtown Traverse City's tree inventory data identifies 0 High Risk Trees, 23 Moderate Risk trees, and 58 Low Risk trees recommended for removal. If High Risk tree removals were present those should be completed within 3 months because observed defects can worsen over time and increase the risk posed by the tree. **The focus for Downtown Traverse City should be on removing the 23 trees listed as Moderate Risk.** Following the removal of the Moderate Risk trees, the focus should shift to removing the Low Risk trees in the DDA District. **Figure 8** provides the street tree and park tree removals by risk rating and relative age distribution.



Figure 7. Street and park tree removals prioritized by risk rating

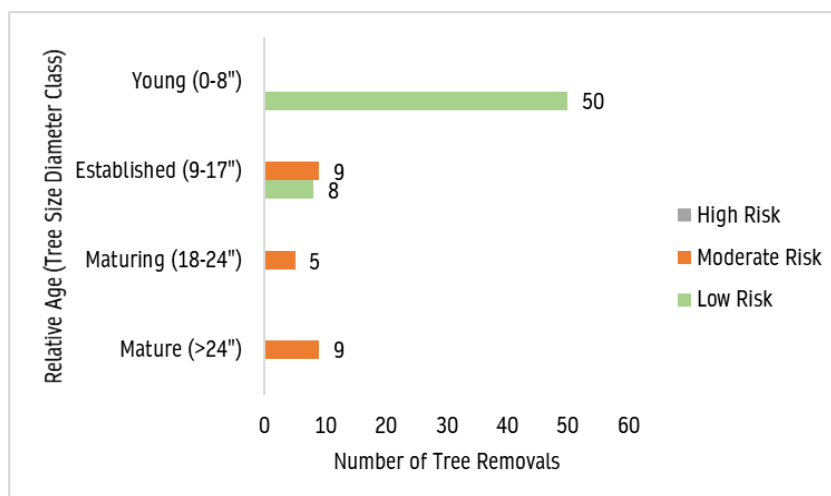


Figure 8. Recommended street and park tree removals prioritized by relative age class and risk rating.

Pruning Recommendations

The tree inventory data **identifies 8 Moderate Risk trees and 1 High Risk tree recommended for priority pruning** (Figure 9). Trees with the maintenance recommendation of priority pruning have at least one dead branch that is 2-inches in diameter or larger, or multiple large dead branches. All High Risk tree pruning should be completed within 3 months because observed defects can worsen over time and increase the risk posed by the tree. After High Risk trees have been addressed, Moderate Risk trees should be pruned. Pruning of Moderate Risk trees should be prioritized based

on their location, defects, and the City/DDA's risk tolerance. Low Risk trees should be pruned as part of a routine pruning cycle.

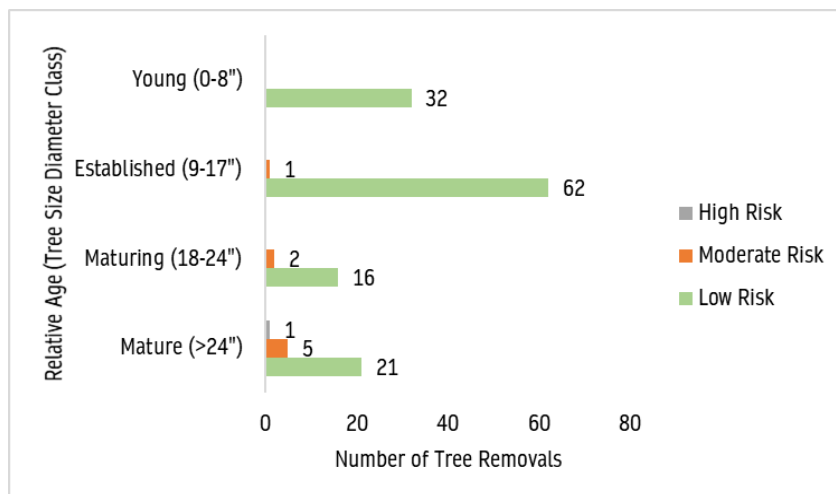


Figure 9 Recommended pruning prioritized by relative age class and risk rating.

ROUTINE INSPECTIONS

Routine inspections are necessary to detect defects that have either already become a risk or can be corrected so they do not become a risk in the future. Inspections should be performed by a qualified arborist, that is knowledgeable in arboriculture and tree risk and can provide proper assessment, care, and informed recommendations. Ideally, the arborist will be ISA Certified and hold the ISA Tree Risk Assessment Qualification credential.

Routine Inspection Recommendations

All inventoried trees should be regularly inspected to identify and mitigate for emerging risk factors. **Annual inspections of 878 DDA District trees, or 80% of the inventoried tree population, should be performed via drive-by assessment** consistent with *ANSI A300 (Part 9)* standards to identify major defects. Drive-by assessments can take place via a slow-moving vehicle. During this assessment, an arborist should attempt to identify any dead or dying trees or any significant tree defects such as large dead branches, major cavities, or trunk decay.

20% of the inventoried tree population or **219 trees should be inspected via walk-by assessment each year**. These walk-by assessments should include a total review and update of the City's tree inventory data and are important for keeping tree inventory updated on five-year cycle. Routine walk-by assessments are also an opportunity to detect early signs of insect and disease pests.

ROUTINE PRUNING CYCLE

Based on the amount of vehicular and pedestrian traffic in the Downtown District, **a three-year Routine Pruning Cycle to maintain the condition of the inventoried tree population should be implemented.** Pruning improves tree condition by correcting defects that would otherwise worsen over time and negatively impact tree health. Over time, routine pruning helps minimize reactive maintenance and instances of elevated risk, serving as the basis for a proactive management program.

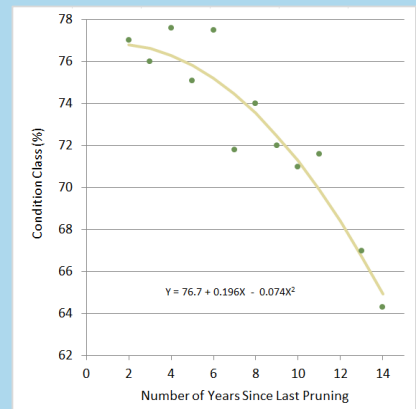
524 trees in the DDA District are recommended for routine pruning (Discretionary Maintenance) or Priority Pruning with a Low Risk Rating (Table 2).

Low Risk trees with the Priority Prune maintenance recommendation should be addressed whenever urban forestry program funding allows, because they have at least one dead branch that is 2 inches in diameter or larger or have multiple large dead branches. Priority pruning for Low Risk trees should be systematically addressed depending on a given tree's location, its particular defects, and Downtown Traverse City's risk tolerance.

	Tree Diameter Class	Number of Trees		
		FY2022	FY2023	FY2024
Routine Pruning (3-year Cycle)	7-12"	99	98	98
	13-18"	41	41	41
	19-24"	22	21	21
	25-30"	11	11	10
	31-36"	2	2	2
	37-42"	2	1	1
	≥43"	-	-	-

Table 2. Recommended three-year routine pruning cycle by diameter class

PROACTIVE MAINTENANCE



Relationship between tree condition and years since previous pruning.
(adapted from Miller and Sylvester 1981)

Miller and Sylvester studied the pruning frequency of 40,000 street trees in Milwaukee, Wisconsin. Trees that had not been pruned for more than 10 years had an average condition rating 10% lower than trees that had been pruned in the previous several years. Their research suggests that a five-year pruning cycle is optimal for urban trees.

Routine inspection and pruning cycles help detect and correct most defects before they reach higher risk levels. DRG recommends two pruning cycles: a Young Tree Training Cycle and a Routine Pruning Cycle.

Newly planted trees will enter the Young Tree Training Cycle once they become established and will move into the Routine Pruning Cycle when they reach maturity. A tree should be eliminated from the Routine Pruning Cycle and removed when its condition warrants it or ages beyond its healthy lifespan.

TREE TRAINING CYCLE

Young tree training (pruning) promotes the development of a strong structure that increases the longevity of Downtown Traverse City's public trees. Young trees can have defects in branching structure that can lead to problems as they age such as codominant leaders, branches with included bark, crossing limbs, and multiple limbs originating from the same point on the trunk. It is best to correct these defects when trees are young while they can be reached from the ground, and pruning wounds are smaller allowing for quicker wound closures. Clearance pruning should also be prioritized when trees are young, because branches causing clearance conflicts will become more difficult and costly to remove as a tree grows.

The Tree Training Cycle should include all deciduous trees that can be pruned from the ground using shears, loppers, and/or polesaw.

Young Tree Training Cycle Recommendations

A total of 532 trees have a maintenance recommendation of Train or Routine prune (trees 6" DBH or less), amounting to an **annual training prune cycle of 178 trees**. When the first three-year Young Tree Training Cycle is complete a new one should begin and include any replacement trees and new trees that were planted during the first cycle. Trees should enter the Young Tree Training Cycle within three years of planting after they have recovered from transplant shock and should continue in the cycle every three years until they can no longer be pruned from the ground, at which point they should move into the Routine Pruning Cycle.

Young Tree Training (3-year Cycle)	Tree Diameter Class	Number of Trees		
		FY2022	FY2023	FY2024
	1-6"	166	166	166
	7-12"	12	11	11

Table 3. Recommended three-year young tree training cycle by tree diameter class

The Young Tree Training Cycle also provides an opportunity to observe new plantings. Periodic inspections after tree planting can help identify which new plantings are having difficulty establishing and to correct the tree's condition, the site's condition, the species planting palette, or some combination.

TREE PLANTING AND STUMP REMOVAL

The inventory identified 25 vacant tree planting locations, 8 stumps, and 52 tree removals along the streets in the DDA District. The 52 street trees recommended for removal will leave behind an additional 52 stumps. Because these sites may be replanted once they become vacant, these 60 stumps should be removed to create planting sites. **It is recommended that all 52 trees are removed in Year 1, along with the 60 stumps (8 existing plus 52 generated from the tree removals) to allow for the planting of 85 trees in the DDA District during Year 1.**

It is anticipated that 11 trees per year will be removed due to natural mortality (1% annual mortality rate). It is recommended that stump removals are routinely completed following tree removals to systematically prepare sites for replanting. Following stump removals, sites should be inspected to assess their suitability for future planting. In some situations where the site is not currently suitable for replanting, soil amendments may be effective at restoring the site's viability. Section 3 provides tree planting considerations, tools, and strategies for planting in downtown Traverse City and Appendix C provides a recommended tree species list.

MAINTENANCE SCHEDULE AND BUDGET

Using Downtown Traverse City's tree inventory data, a four-year tree maintenance schedule was developed with the highest priority recommended maintenance tasks to complete each year. Budgetary projections are made using industry knowledge. **Table 4** provides a summary of all inventoried trees and estimated costs. **Tables 5 & 6** provide a summary of activities and estimated costs broken down by whether the trees are grown along street (street trees) or in parks (park trees). street and park trees, respectively. **Tables 7, 8 and 9** provide detailed information on tree counts by size and estimated costs for each maintenance activity over four years for all inventoried trees (Table 7), street trees (Table 8) and park trees (Table 9). These schedules provide a framework for completing the recommended tree maintenance as quickly as possible to transition the maintenance program for the DDA District to a more proactive program.

Adequate funding is needed to ensure that high priority trees are expediently managed and that the Young Tree Training and Routine Pruning cycles begin immediately. If routing efficiencies and/or contract specifications allow more tree work to be completed each year, or if this maintenance schedule requires adjustment to meet budgetary or operational needs, then it should be modified accordingly. Unforeseen situations such as severe weather events may arise and change the maintenance needs of Downtown Traverse City's inventoried tree population. If maintenance needs change, then budgets, staffing, and equipment should be adjusted to meet the new demand.

SUMMARY ALL INVENTORIED STREET & PARK TREES				
	Number of Street & Park Trees			
Activity	2021	2022	2023	2024
Tree Removal	52	40	11	11
Stump Removal	60	40	11	11
Tree Planting	85	11	11	11
Tree Pruning (includes, tree risk pruning, young tree training and routine pruning)	1	363	351	350
TOTAL	198	454	384	383

	Estimated Costs			
Activity	2021	2022	2023	2024
Tree Removal	\$ 8,763.00	\$ 15,977.00	\$ 6,655.00	\$ 6,655.00
Stump Removal	\$ 6,485.00	\$ 6,195.00	\$ 2,200.00	\$ 2,200.00
Tree Planting	\$ 34,000.00	\$ 5,500.00	\$ 5,500.00	\$ 5,500.00
Tree Pruning (includes tree risk pruning, young tree training and routine pruning)	\$ 325.00	\$ 26,065.00	\$ 23,240.00	\$ 23,015.00
Total	\$ 49,573.00	\$ 53,737.00	\$ 37,595.00	\$ 37,370.00

Table 4. Summary Tree Maintenance All Inventoried Trees

STREET TREE SUMMARY				
	Number of Street Trees			
Activity	2021	2022	2023	2024
Tree Removal	52	6	6	6
Stump Removal	60	6	6	6
Tree Planting	85	6	6	6
Tree Pruning (includes, tree risk pruning, young tree training and routine pruning)	1	217	216	216
TOTAL	198	235	234	234

	Estimated Costs			
Activity	2021	2022	2023	2024
Tree Removal	\$ 8,763.00	\$ 3,630.00	\$ 3,630.00	\$ 3,630.00
Stump Removal	\$ 6,485.00	\$ 1,200.00	\$ 1,200.00	\$ 1,200.00
Tree Planting	\$ 34,000.00	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00
Tree Pruning (includes tree risk pruning, young tree training and routine pruning)	\$ 325.00	\$ 11,025.00	\$ 10,955.00	\$ 10,955.00
Total	\$ 49,573.00	\$ 18,855.00	\$ 18,785.00	\$ 18,785.00

Table 6. Summary Tree Maintenance Street Trees

SUMMARY OF PARK TREES				
	Number of Park Trees			
Activity	2021	2022	2023	2024
Tree Removal	0	34	5	5
Stump Removal	0	34	5	5
Tree Planting	0	5	5	5
Tree Pruning (includes, tree risk pruning, young tree training and routine pruning)	0	146	135	134
TOTAL	0	219	150	149

	Estimated Costs			
Activity	2021	2022	2023	2024
Tree Removal	\$ -	\$ 12,347.00	\$ 3,025.00	\$ 3,025.00
Stump Removal	\$ -	\$ 4,995.00	\$ 1,000.00	\$ 1,000.00
Tree Planting	\$ -	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00
Tree Pruning (includes tree risk pruning, young tree training and routine pruning)	\$ -	\$ 15,040.00	\$ 12,285.00	\$ 12,060.00
Total	\$ -	\$ 34,882.00	\$ 18,810.00	\$ 18,585.00

Table 5. Summary Tree Maintenance Park Trees

Street & Park Trees Estimated Activity Costs			2021		2022		2023		2024		Total Cost
Activity	Diameter Class	Avg. Cost/Tree	Count	Cost*	Count	Cost	Count	Cost	Count	Cost	
High & Moderate Risk Tree Removals**	1-6"	\$50		\$ -		\$ -		\$ -		\$ -	\$ -
	7-12"	\$138	2	\$ 276.00	1	\$ 138.00		\$ -		\$ -	\$ 414.00
	13-18"	\$314	3	\$ 942.00	4	\$ 1,256.00		\$ -		\$ -	\$ 2,198.00
	19-24"	\$605	1	\$ 605.00	14	\$ 8,470.00	11	\$ 6,655.00	11	\$ 6,655.00	\$ 22,385.00
	25-30"	\$825	1	\$ 825.00	2	\$ 1,650.00		\$ -		\$ -	\$ 2,475.00
	31-36"	\$1,045	3	\$ 3,135.00	3	\$ 3,135.00		\$ -		\$ -	\$ 6,270.00
	37-42"	\$1,485		\$ -		\$ -		\$ -		\$ -	\$ -
	≥43"	\$2,035		\$ -		\$ -		\$ -		\$ -	\$ -
Activity Total(s)			10	\$ 5,783.00	24	\$ 14,649.00	11	\$ 6,655.00	11	\$ 6,655.00	\$ 33,742.00
Low Risk Tree Removals	1-6"	\$50	32	\$ 1,600.00	10	\$ 500.00		\$ -		\$ -	\$ 2,100.00
	7-12"	\$138	10	\$ 1,380.00	6	\$ 828.00		\$ -		\$ -	\$ 2,208.00
	13-18"	\$314		\$ -		\$ -		\$ -		\$ -	\$ -
	19-24"	\$605		\$ -		\$ -		\$ -		\$ -	\$ -
	25-30"	\$825		\$ -		\$ -		\$ -		\$ -	\$ -
	31-36"	\$1,045		\$ -		\$ -		\$ -		\$ -	\$ -
	37-42"	\$1,485		\$ -		\$ -		\$ -		\$ -	\$ -
	≥43"	\$2,035		\$ -		\$ -		\$ -		\$ -	\$ -
Activity Total(s)			42	\$ 2,980.00	16	\$ 1,328.00	0	\$ -	0	\$ -	\$ 4,308.00
Stump Removals**	1-6"	\$85	37	\$ 3,145.00	10	\$ 850.00		\$ -		\$ -	\$ 3,995.00
	7-12"	\$100	14	\$ 1,400.00	7	\$ 700.00		\$ -		\$ -	\$ 2,100.00
	13-18"	\$130	3	\$ 390.00	4	\$ 520.00		\$ -		\$ -	\$ 910.00
	19-24"	\$200	1	\$ 200.00	14	\$ 2,800.00	11	\$ 2,200.00	11	\$ 2,200.00	\$ 7,400.00
	25-30"	\$250	1	\$ 250.00	2	\$ 500.00		\$ -		\$ -	\$ 750.00
	31-36"	\$275	4	\$ 1,100.00	3	\$ 825.00		\$ -		\$ -	\$ 1,925.00
	37-42"	\$300		\$ -		\$ -		\$ -		\$ -	\$ -
	≥43"	\$325		\$ -		\$ -		\$ -		\$ -	\$ -
Activity Total(s)			60	\$ 6,485.00	40	\$ 6,195.00	11	\$ 2,200.00	11	\$ 2,200.00	\$ 17,080.00
High & Moderate Risk Pruning	1-6"	\$70		\$ -		\$ -		\$ -		\$ -	\$ -
	7-12"	\$120		\$ -		\$ -		\$ -		\$ -	\$ -
	13-18"	\$200		\$ -	2	\$ 400.00		\$ -		\$ -	\$ 400.00
	19-24"	\$260		\$ -	1	\$ 260.00		\$ -		\$ -	\$ 260.00
	25-30"	\$290		\$ -	3	\$ 870.00		\$ -		\$ -	\$ 870.00
	31-36"	\$325	1	\$ 325.00	2	\$ 650.00		\$ -		\$ -	\$ 975.00
	37-42"	\$380		\$ -		\$ -		\$ -		\$ -	\$ -
	≥43"	\$590		\$ -		\$ -		\$ -		\$ -	\$ -
Activity Total(s)			1	\$ 325.00	8	\$ 2,180.00	0	\$ -	0	\$ -	\$ 2,505.00

Table 7. All Inventoried Trees Four-Year Tree Maintenance Program

Street & Park Trees Estimated Activity Costs			2021		2022		2023		2024		Total Cost
Activity	Diameter Class	Avg. Cost/Tree	Count	Cost*	Count	Cost	Count	Cost	Count	Cost	
Tree Training (3-year Cycle)***	1-6"	\$25		\$ -	166	\$ 4,150.00	166	\$ 4,150.00	166	\$ 4,150.00	\$ 12,450.00
	7-12"	\$70		\$ -	12	\$ 300.00	11	\$ 275.00	11	\$ 275.00	\$ 850.00
Activity Total(s)			0	\$ -	178	\$ 4,450.00	177	\$ 4,425.00	177	\$ 4,425.00	\$ 13,300.00
Routine Pruning (3-year Cycle)****	7-12"	\$70		\$ -	99	\$ 6,930.00	98	\$ 6,860.00	98	\$ 6,860.00	\$ 20,650.00
	13-18"	\$120		\$ -	41	\$ 4,920.00	41	\$ 4,920.00	41	\$ 4,920.00	\$ 14,760.00
	19-24"	\$170		\$ -	22	\$ 3,740.00	21	\$ 3,570.00	21	\$ 3,570.00	\$ 10,880.00
	25-30"	\$225		\$ -	11	\$ 2,475.00	11	\$ 2,475.00	10	\$ 2,250.00	\$ 7,200.00
	31-36"	\$305		\$ -	2	\$ 610.00	2	\$ 610.00	2	\$ 610.00	\$ 1,830.00
	37-42"	\$380		\$ -	2	\$ 760.00	1	\$ 380.00	1	\$ 380.00	\$ 1,520.00
	≥43"	\$590		\$ -		\$ -		\$ -		\$ -	\$ -
Activity Total(s)			0	\$ -	177	\$ 19,435.00	174	\$ 18,815.00	173	\$ 18,590.00	\$ 56,840.00
Street Tree Planting and Post Planting Care (Vacant Sites, Stumps & Tree Removals)	Purchasing B&B Nursery Stock	\$275	85	\$ 23,375.00		\$ -		\$ -		\$ -	\$ 23,375.00
	Planting, Staking, & Mulching	\$125	85	\$ 10,625.00		\$ -		\$ -		\$ -	\$ 10,625.00
	Watering (1/wk - Growing Season - 2 years)	\$100	85	\$ 8,500.00		\$ -		\$ -		\$ -	\$ 8,500.00
Activity Total(s)			170	\$ 34,000.00	0	\$ -	0	\$ -	0	\$ -	\$ 34,000.00
Planting and Post Planting Care based on Natural Mortality (1% of the street and park tree population per year)	Purchasing B&B Nursery Stock	\$275		\$ -	11	\$ 3,025.00	11	\$ 3,025.00	11	\$ 3,025.00	\$ 9,075.00
	Planting, Staking, & Mulching	\$125		\$ -	11	\$ 1,375.00	11	\$ 1,375.00	11	\$ 1,375.00	\$ 4,125.00
	Watering (1/wk - Growing Season - 2 years)	\$100		\$ -	11	\$ 1,100.00	11	\$ 1,100.00	11	\$ 1,100.00	\$ 3,300.00
Activity Total(s)			0	\$ -	11	\$ 5,500.00	11	\$ 5,500.00	11	\$ 5,500.00	\$ 13,200.00
Activity Grand Total			283		454		384		383		\$ 1,221.00
Cost Grand Total				\$ 49,573.00		\$ 53,737.00		\$ 37,595.00		\$ 37,370.00	\$ 128,702.00
*Based on average U.S. tree care contractor costs **An annual tree mortality rate of 1% of the downtown street and park tree population has been factored into Tree Removal and Stump Removals after 2021. ***Includes trees in the "Train" maintenance category and 1-6" tree size in the "Prune Category" ****Includes trees with in the Discretionary Maintenance Category & Trees that are Low Risk in the Prune Maintenance category											

Table 7. All Inventoried Trees Four-Year Tree Maintenance Program (continued)

Street Trees Estimated Activity Costs			2021		2022		2023		2024		Total Cost
Activity	Diameter Class	Avg. Cost/Tree	Count	Cost	Count	Cost	Count	Cost	Count	Cost	
High & Moderate Risk Tree Removals**	1-6"	\$50		\$ -		\$ -		\$ -		\$ -	\$ -
	7-12"	\$138	2	\$ 276.00		\$ -		\$ -		\$ -	\$ 276.00
	13-18"	\$314	3	\$ 942.00		\$ -		\$ -		\$ -	\$ 942.00
	19-24"	\$605	1	\$ 605.00	6	\$ 3,630.00	6	\$ 3,630.00	6	\$ 3,630.00	\$ 11,495.00
	25-30"	\$825	1	\$ 825.00		\$ -		\$ -		\$ -	\$ 825.00
	31-36"	\$1,045	3	\$ 3,135.00		\$ -		\$ -		\$ -	\$ 3,135.00
	37-42"	\$1,485		\$ -		\$ -		\$ -		\$ -	\$ -
	≥43"	\$2,035		\$ -		\$ -		\$ -		\$ -	\$ -
Activity Total(s)			10	\$ 5,783.00	6	\$ 3,630.00	6	\$ 3,630.00	6	\$ 3,630.00	\$ 16,673.00
Low Risk Tree Removals	1-6"	\$50	32	\$ 1,600.00		\$ -		\$ -		\$ -	\$ 1,600.00
	7-12"	\$138	10	\$ 1,380.00		\$ -		\$ -		\$ -	\$ 1,380.00
	13-18"	\$314		\$ -		\$ -		\$ -		\$ -	\$ -
	19-24"	\$605		\$ -		\$ -		\$ -		\$ -	\$ -
	25-30"	\$825		\$ -		\$ -		\$ -		\$ -	\$ -
	31-36"	\$1,045		\$ -		\$ -		\$ -		\$ -	\$ -
	37-42"	\$1,485		\$ -		\$ -		\$ -		\$ -	\$ -
	≥43"	\$2,035		\$ -		\$ -		\$ -		\$ -	\$ -
Activity Total(s)			42	\$ 2,980.00	0	\$ -	0	\$ -	0	\$ -	\$ 2,980.00
Stump Removals**	1-6"	\$85	37	\$ 3,145.00		\$ -		\$ -		\$ -	\$ 3,145.00
	7-12"	\$100	14	\$ 1,400.00		\$ -		\$ -		\$ -	\$ 1,400.00
	13-18"	\$130	3	\$ 390.00		\$ -		\$ -		\$ -	\$ 390.00
	19-24"	\$200	1	\$ 200.00	6	\$ 1,200.00	6	\$ 1,200.00	6	\$ 1,200.00	\$ 3,800.00
	25-30"	\$250	1	\$ 250.00		\$ -		\$ -		\$ -	\$ 250.00
	31-36"	\$275	4	\$ 1,100.00		\$ -		\$ -		\$ -	\$ 1,100.00
	37-42"	\$300		\$ -		\$ -		\$ -		\$ -	\$ -
	≥43"	\$325		\$ -		\$ -		\$ -		\$ -	\$ -
Activity Total(s)			60	\$ 6,485.00	6	\$ 1,200.00	6	\$ 1,200.00	6	\$ 1,200.00	\$ 10,085.00
High & Moderate Risk Pruning	1-6"	\$70		\$ -		\$ -		\$ -		\$ -	\$ -
	7-12"	\$120		\$ -		\$ -		\$ -		\$ -	\$ -
	13-18"	\$200		\$ -		\$ -		\$ -		\$ -	\$ -
	19-24"	\$260		\$ -		\$ -		\$ -		\$ -	\$ -
	25-30"	\$290		\$ -		\$ -		\$ -		\$ -	\$ -
	31-36"	\$325	1	\$ 325.00		\$ -		\$ -		\$ -	\$ 325.00
	37-42"	\$380		\$ -		\$ -		\$ -		\$ -	\$ -
	≥43"	\$590		\$ -		\$ -		\$ -		\$ -	\$ -
Activity Total(s)			1	\$ 325.00	0	\$ -	0	\$ -	0	\$ -	\$ 325.00

Table 8. Street Trees Four-Year Tree Maintenance Program

Street Trees Estimated Activity Costs			2021		2022		2023		2024		Total Cost
Activity	Diameter Class	Avg. Cost/Tree	Count	Cost	Count	Cost	Count	Cost	Count	Cost	
Tree Training (3-year Cycle)***	1-6"	\$25		\$ -	112	\$ 2,800.00	112	\$ 2,800.00	112	\$ 2,800.00	\$ 8,400.00
	7-12"	\$70		\$ -	7	\$ 175.00	7	\$ 175.00	7	\$ 175.00	\$ 525.00
Activity Total(s)			0	\$ -	119	\$ 2,975.00	119	\$ 2,975.00	119	\$ 2,975.00	\$ 8,925.00
Routine Pruning (3-year Cycle)****	7-12"	\$70		\$ -	82	\$ 5,740.00	81	\$ 5,670.00	81	\$ 5,670.00	\$ 17,080.00
	13-18"	\$120		\$ -	12	\$ 1,440.00	12	\$ 1,440.00	12	\$ 1,440.00	\$ 4,320.00
	19-24"	\$170		\$ -	2	\$ 340.00	2	\$ 340.00	2	\$ 340.00	\$ 1,020.00
	25-30"	\$225		\$ -	1	\$ 225.00	1	\$ 225.00	1	\$ 225.00	\$ 675.00
	31-36"	\$305		\$ -	1	\$ 305.00	1	\$ 305.00	1	\$ 305.00	\$ 915.00
	37-42"	\$380		\$ -		\$ -		\$ -		\$ -	\$ -
Activity Total(s)			0	\$ -	98	\$ 8,050.00	97	\$ 7,980.00	97	\$ 7,980.00	\$ 24,010.00
Street Tree Planting and Post Planting Care (Vacant Sites, Stumps & Tree Removals)	Purchasing B&B Nursery Stock	\$275	85	\$ 23,375.00		\$ -		\$ -		\$ -	\$ 23,375.00
	Planting, Staking, & Mulching	\$125	85	\$ 10,625.00		\$ -		\$ -		\$ -	\$ 10,625.00
	Watering (1/wk - Growing Season - 2 years)	\$100	85	\$ 8,500.00		\$ -		\$ -		\$ -	\$ 8,500.00
Activity Total(s)			85	\$ 34,000.00	0	\$ -	0	\$ -	0	\$ -	\$ 34,000.00
Planting and Post Planting Care based on Natural Mortality (1% of the street and park tree population per year)	Purchasing B&B Nursery Stock	\$275		\$ -	6	\$ 1,650.00	6	\$ 1,650.00	6	\$ 1,650.00	\$ 4,950.00
	Planting, Staking, & Mulching	\$125		\$ -	6	\$ 750.00	6	\$ 750.00	6	\$ 750.00	\$ 2,250.00
	Watering (1/wk - Growing Season - 2 years)	\$100		\$ -	6	\$ 600.00	6	\$ 600.00	6	\$ 600.00	\$ 1,800.00
Activity Total(s)			0	\$ -	6	\$ 3,000.00	6	\$ 3,000.00	6	\$ 3,000.00	\$ 7,200.00
Activity Grand Total			198		235		234		234		\$ 703.00
Cost Grand Total				\$ 49,573.00		\$ 18,855.00		\$ 18,785.00		\$ 18,785.00	\$ 56,425.00

*Based on average U.S. tree care contractor costs

**An annual tree mortality rate of 1% has been factored into Tree Removal and Stump Removals after 2021.

***Includes trees in the "Train" maintenance category and 1-6" tree size in the "Prune Category"

****Includes trees with in the Discretionary Maintenance Category & Trees that are Low Risk in the Prune Maintenance category

Table 8. Street Trees Four-Year Tree Maintenance Program (continued)

Park Trees Estimated Activity Costs			2021		2022		2023		2024		Total Cost
Activity	Diameter Class	Avg. Cost/Tree	Count	Cost	Count	Cost	Count	Cost	Count	Cost	
High & Moderate Risk Tree Removals	1-6"	\$50		\$ -		\$ -		\$ -		\$ -	\$ -
	7-12"	\$138		\$ -	1	\$ 138.00		\$ -		\$ -	\$ 138.00
	13-18"	\$314		\$ -	4	\$ 1,256.00		\$ -		\$ -	\$ 1,256.00
	19-24"	\$605		\$ -	8	\$ 4,840.00	5	\$ 3,025.00	5	\$ 3,025.00	\$ 10,890.00
	25-30"	\$825		\$ -	2	\$ 1,650.00		\$ -		\$ -	\$ 1,650.00
	31-36"	\$1,045		\$ -	3	\$ 3,135.00		\$ -		\$ -	\$ 3,135.00
	37-42"	\$1,485		\$ -		\$ -		\$ -		\$ -	\$ -
	≥43"	\$2,035		\$ -		\$ -		\$ -		\$ -	\$ -
Activity Total(s)					18	\$ 11,019.00	5	\$ 3,025.00	5	\$ 3,025.00	\$ 17,069.00
Low Risk Tree Removals**	1-6"	\$50		\$ -	10	\$ 500.00		\$ -		\$ -	\$ 500.00
	7-12"	\$138		\$ -	6	\$ 828.00		\$ -		\$ -	\$ 828.00
	13-18"	\$314		\$ -		\$ -		\$ -		\$ -	\$ -
	19-24"	\$605		\$ -		\$ -		\$ -		\$ -	\$ -
	25-30"	\$825		\$ -		\$ -		\$ -		\$ -	\$ -
	31-36"	\$1,045		\$ -		\$ -		\$ -		\$ -	\$ -
	37-42"	\$1,485		\$ -		\$ -		\$ -		\$ -	\$ -
	≥43"	\$2,035		\$ -		\$ -		\$ -		\$ -	\$ -
Activity Total(s)					16	\$ 1,328.00	0	\$ -	0	\$ -	\$ 1,328.00
Stump Removals**	1-6"	\$85		\$ -	10	\$ 850.00		\$ -		\$ -	\$ 850.00
	7-12"	\$100		\$ -	7	\$ 700.00		\$ -		\$ -	\$ 700.00
	13-18"	\$130		\$ -	4	\$ 520.00		\$ -		\$ -	\$ 520.00
	19-24"	\$200		\$ -	8	\$ 1,600.00	5	\$ 1,000.00	5	\$ 1,000.00	\$ 3,600.00
	25-30"	\$250		\$ -	2	\$ 500.00		\$ -		\$ -	\$ 500.00
	31-36"	\$275		\$ -	3	\$ 825.00		\$ -		\$ -	\$ 825.00
	37-42"	\$300		\$ -		\$ -		\$ -		\$ -	\$ -
	≥43"	\$325		\$ -		\$ -		\$ -		\$ -	\$ -
Activity Total(s)					34	\$ 4,995.00	5	\$ 1,000.00	5	\$ 1,000.00	\$ 6,995.00
High & Moderate Risk Pruning	1-6"	\$70		\$ -		\$ -		\$ -		\$ -	\$ -
	7-12"	\$120		\$ -		\$ -		\$ -		\$ -	\$ -
	13-18"	\$200		\$ -	2	\$ 400.00		\$ -		\$ -	\$ 400.00
	19-24"	\$260		\$ -	1	\$ 260.00		\$ -		\$ -	\$ 260.00
	25-30"	\$290		\$ -	3	\$ 870.00		\$ -		\$ -	\$ 870.00
	31-36"	\$325		\$ -	2	\$ 650.00		\$ -		\$ -	\$ 650.00
	37-42"	\$380		\$ -		\$ -		\$ -		\$ -	\$ -
	≥43"	\$590		\$ -		\$ -		\$ -		\$ -	\$ -
Activity Total(s)					8	\$ 2,180.00	0	\$ -	0	\$ -	\$ 2,180.00

Table 9. Park Trees Four-Year Tree Maintenance Program

Park Trees Estimated Activity Costs			2021		2022		2023		2024		Total Cost
Activity	Diameter Class	Avg. Cost/Tree	Count	Cost	Count	Cost	Count	Cost	Count	Cost	
Tree Training *** (3-year Cycle)	1-6"	\$25		\$ -	54	\$ 1,350.00	54	\$ 1,350.00	54	\$ 1,350.00	\$ 4,050.00
	7-12"	\$70		\$ -	5	\$ 125.00	4	\$ 100.00	4	\$ 100.00	\$ 325.00
Activity Total(s)					59	\$ 1,475.00	58	\$ 1,450.00	58	\$ 1,450.00	\$ 4,375.00
Routine Pruning **** (3-year Cycle)	7-12"	\$70		\$ -	17	\$ 1,190.00	17	\$ 1,190.00	17	\$ 1,190.00	\$ 3,570.00
	13-18"	\$120		\$ -	29	\$ 3,480.00	29	\$ 3,480.00	29	\$ 3,480.00	\$ 10,440.00
	19-24"	\$170		\$ -	20	\$ 3,400.00	19	\$ 3,230.00	19	\$ 3,230.00	\$ 9,860.00
	25-30"	\$225		\$ -	10	\$ 2,250.00	10	\$ 2,250.00	9	\$ 2,025.00	\$ 6,525.00
	31-36"	\$305		\$ -	1	\$ 305.00	1	\$ 305.00	1	\$ 305.00	\$ 915.00
	37-42"	\$380		\$ -	2	\$ 760.00	1	\$ 380.00	1	\$ 380.00	\$ 1,520.00
	≥43"	\$590		\$ -		\$ -		\$ -		\$ -	\$ -
Activity Total(s)					79	\$ 11,385.00	77	\$ 10,835.00	76	\$ 10,610.00	\$ 32,830.00
Street Tree Planting and Post Planting Care (Vacant Sites, Stumps & Tree Removals)	Purchasing B&B Nursery Stock	\$275		\$ -		\$ -		\$ -		\$ -	\$ -
	Planting, Staking, & Mulching	\$125		\$ -		\$ -		\$ -		\$ -	\$ -
	Watering (1/wk - Growing Season - 2 years)	\$100		\$ -		\$ -		\$ -		\$ -	\$ -
Activity Total(s)					0	\$ -	0	\$ -	0	\$ -	\$ -
Planting and Post Planting Care based on Natural Mortality (1% of the street and park tree population per year)	Purchasing B&B Nursery Stock	\$275		\$ -	5	\$ 1,375.00	5	\$ 1,375.00	5	\$ 1,375.00	\$ 4,125.00
	Planting, Staking, & Mulching	\$125		\$ -	5	\$ 625.00	5	\$ 625.00	5	\$ 625.00	\$ 1,875.00
	Watering (1/wk - Growing Season - 2 years)	\$100		\$ -	5	\$ 500.00	5	\$ 500.00	5	\$ 500.00	\$ 1,500.00
Activity Total(s)			0	\$ -	5	\$ 2,500.00	5	\$ 2,500.00	5	\$ 2,500.00	\$ 6,000.00
Activity Grand Total			0		219		150		149		\$ 518.00
Cost Grand Total				\$ -		\$ 34,882.00		\$ 18,810.00		\$ 18,585.00	\$ 72,277.00

*Based on average U.S. tree care contractor costs

**An annual tree mortality rate of 1% has been factored into Tree Removal and Stump Removals after 2021.

***Includes trees in the "Train" maintenance category and 1-6" tree size in the "Prune Category"

****Includes trees with in the Discretionary Maintenance Category & Trees that are Low Risk in the Prune Maintenance category

Table 9. Park Trees Four-Year Tree Maintenance Program (continued)

Section 3:

Tree Planting

DOWNTOWN TRAVERSE CITY



TREE PLANTING IN DOWNTOWN TRAVERSE CITY

Considerations, Tools & Strategies

CONSIDERATIONS

Understanding site characteristics including, size of planting area, soils, and location of utilities and infrastructure, along with community preferences ensures that tree planting is conducted based on specific local conditions and the values, needs, and priorities of the community.

Community Themes & Preferences

In 2021, the Traverse City Downtown Development Authority (DDA) and Davey Resource Group, Inc. engaged the Traverse City DDA Board and community, through public meetings and an on-line survey, to understand their preferences related to trees and streetscapes in the DDA District. Participants were asked general questions and then viewed a series of streetscape images and asked to comment on what they liked and did not like about each streetscape. The following **community themes and preferences** emerged from this engagement.

- **Top five words selected to describe downtown Traverse City's trees:**
 1. Beauty
 2. Small Flowering /Ornamental Trees
 3. Too Few Trees
 4. Shade
 5. Trees Need Maintenance
- **82% of respondents** feel the **level of tree care maintenance** required is an **important consideration when selecting species** to plant downtown.
- **60% feel that diversity of tree species is important** to have in downtown Traverse City.
 - Age diversity should also be considered.
- **Streetscapes with medium/large size shade trees are preferred** (see *Streetscape Preference* below).
- **Flowering trees** are appreciated as **accent trees**.
- Streetscapes should **represent the uniqueness of Traverse City**.

- The use of **native tree species should be prioritized** for planting when conditions allow.
- On average, **65% of respondents preferred trees mixed with landscaping in planting beds** (raised or at grade).
- **Equal split between respondents who prefer a more uniform look and those that prefer more diversity** in streetscape tree species.
- Tree species should be selected based on their mature size for the site and **avoid blocking building architecture, facades, and signs.**
 - Views should also be a consideration, including those of people who work or reside in buildings that are above street level.
- Amount and type of **debris tree species produce should be a factor in species selection.**
- **Consideration of site factors** including width of sidewalk, size of planting area, and potential hardscape and infrastructure conflicts.
- Equal interest in having **access to both shady and sunny locations along the street** – plan for access to both.
- **Use green infrastructure**, including trees and bioswales, **to manage stormwater.**
- **Plan for the full lifecycle of the tree** from planting and removal to utilizing the wood after it has been removed.
- **Consider the benefits different tree species provide** including carbon storage and temperature reductions (urban heat island impacts)
- **57% of respondents are interested in planting ornamental cherry trees** to celebrate Traverse City's designation as the "Cherry Capital" in parks or other open spaces downtown (not as street trees).

Community Streetscape Preferences (Ranked in Order)



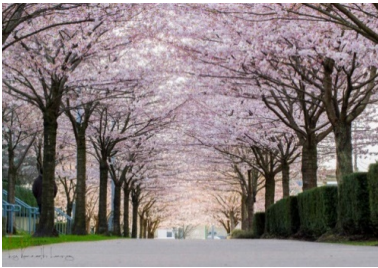
#1 Medium/Large Shade Trees (Holland, MI)

Like the size of these trees for downtown area; trees are mixed with landscaping in a raised bed; and look to be well-maintained.



#2 Mix of Medium Shade Trees & Flowering Trees (Fullerton, CA)

Like the size of trees for a downtown area; the mix of different tree species (flowering and shade trees); and the boulevard planted with trees.



#3 Medium Flowering Trees (Ornamental Cherry) (Vancouver, BC)

Like the size of these trees for a downtown area.

There is interest in planting ornamental flowering cherry trees (where appropriate) to celebrate Traverse City's title of "Cherry Capital of the World" (57% of respondents).



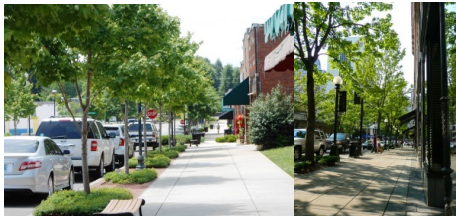
#4 Large Shade Trees (Savannah, GA)

Like the size of these trees and the look of this park promenade but acknowledged that the size of these tree is too large for downtown. There are, however, opportunities to plant large shade trees with spreading canopies in parks or other open spaces.



#5 Large Shade trees (Greenville, SC)

Like the shade and tree canopy that these trees provide but noted that the size of these trees is too large for downtown Traverse City



#6 Large Shade Trees (Clinton, TN/Seattle, WA)

Like the shade size of these trees (at maturity) for a downtown area and that the trees are mixed with landscaping.



#7 Small/Ornamental Flowering Trees (Knoxville, TN)

Did not like the tree species and felt the flowering/ornamental trees were too small but liked how trees were mixed with landscaping in planting strips.



#8 Medium/Large Specimen Shade Tree (Madison, WI)

This was the least preferred streetscape presented because there were too few trees growing along the street.

Soil Types

The soils and land characteristics of the Traverse City region have been influenced by the glaciers and lake that once covered the land. As the glaciers receded and melted, they left behind glacial deposits of rocks, boulders, gravels, sand, silt, and clay which formed the parent materials of Traverse City's soils. Downtown's soils are primarily sandy loam (Lake beach and Eastport sand, and East Lake-Mancelona loamy sands) which tend to be very well draining and do not readily hold on to soil moisture (USDA Natural Resources Conservation Service, n.d.).

Soil Volume

The amount or volume of soil available directly effects a tree's ability to grow and thrive. Many communities have adopted minimum soil volumes to ensure the optimum growth and health of their street trees. The amount of soil available for trees also has a positive impact on the quantity and quality of stormwater entering lakes, rivers, and streams. Studies have found that by intercepting and slowing rainwater and allowing it to slowly soak into the soil - trees can reduce the amount of stormwater runoff and pollutants by 20-60% (Johnson, et al., 2017).

The following minimum soil volumes, by mature size, have been adopted by many communities throughout the United States (Deeproot, 2020). Traverse City should consider adopting these minimum soil volume standards as an urban forest best management practice.

- Small Trees: 300 cubic feet
- Medium Trees: 600 cubic feet
- Large Trees: 1,000 cubic feet

Note: These are *minimum* soil volumes and the amount of uncompacted soil for trees to grow should be as large as possible.

Streetscape redesign and infrastructure replacement projects provide an ideal opportunity to incorporate trees and adequate soil volume into the planning and design phases, which can make providing this optimal soil volume less daunting. There are also technologies to assist in maximizing rooting space available for trees (see Tools and Strategies below).

Utilities

Knowledge of the location of overhead and underground utilities **before** selecting both tree planting locations and species, is one of the keys to successfully growing and caring for trees in urban and suburban areas. Overhead utilities are easy to identify and include both electrical and telecommunications lines, as well as utility service lines to homes and businesses. For underground utilities, including, water, sanitary sewer, electrical, telecommunication, and gas lines - Miss Dig, Michigan's utility notification system (811) - should be contacted to mark their location. Identifying the location of service leads for water, sewer, and gas to homes and businesses is also important to ensure that trees are not planted on top of these lines. There may be other

underground utilities, like traffic lights and streetlights that are in the right-of-way that Miss Dig may not mark, working in close coordination with the City of Traverse City to identify their location is also important for proper site selection.

To avoid future conflicts, trees should be planted a minimum of five (5) feet from all utility **service leads** for homes and businesses, and ten (10) feet from fire hydrants.

Tree Lawn, Driveways, Street Corners, and Signs

The width of the tree lawn (the area between the sidewalk and the curb), and the location of driveways and signs are also important to consider when selecting tree species. In general, the following guidelines should be followed:

Tree Lawn Width

Less than 3-feet wide: No tree

4-6 feet wide: Small Mature Tree Species (less than 25' tall at maturity)

6-8 feet wide: Medium Tree Species (less than 50' tall at maturity)

Greater than 8' wide: Large Mature Tree Species (greater than 50' tall)

Driveways

Trees should be planted to at least 10-feet from driveways.

Street Corners

Trees should be planted at least 25-feet from street corners and intersections (measured from the point of the nearest intersecting curb or curb lines).

Signs

Trees should be planted to ensure they will not block traffic and wayfinding signs at the time of planting and as they grow.

TOOLS AND STRATEGIES

One of the key considerations for trees to grow and thrive in Downtown Traverse City is having adequate soil volume. Establishing minimum soil volumes, as described above, can help to ensure that trees have enough soil to develop healthy canopies and reach their optimal mature size. There are a number of strategies and technologies that can help achieve this soil volume, even in areas that currently have sidewalk and pavement.

Contiguous Open Tree & Landscape Beds

Contiguous tree and landscape beds are connected and have exposed soil and mulch that can help provide adequate soil volume and space for trees to grow (Figure 10). These planting beds can be curbed or at grade; curbed beds can provide some protection from snow and ice melting products and other elements that may damage trees.



Figure 10.

Contiguous Open Tree & Landscape Bed
Photo: sfbetterstreets.org

Bump Outs/Curb Extensions

A landscape bump-out/curb extension is a vegetated area that protrudes into the parking lane of a street, to provide a growing space for plants or trees (Figure 11). These spaces can be used to beautify a streetscape while providing greater stormwater retention and slowing traffic at the bump-out location.



Figure 11.

Landscaped Bump Out/Curb Extension
Photo: Philadelphia Water Department

Suspended Pavement and Soil Cell Systems

Suspended pavement and soil cells are engineered systems that help transfer the weight and force of a sidewalk while creating areas of uncompacted soils for tree root growth. The cell systems can be interlocked (depending on manufacturer) and expanded to meet the specific needs of the project. To install soil cells, existing soils are excavated to the desired depth, the area is then compacted, and the soil cell units are installed, filled with uncompacted soil, and topped with the desired hardscape or pavement material (Figure 12). Due to the amount of excavation needed in order to make room for this system, soil cells are best suited for new construction areas or for areas where existing trees will not be impacted. Soil cells provide the greatest amount of uncompacted soil volume. Examples of soil cell systems include Silva Cells and Stratavault Soil Cells.

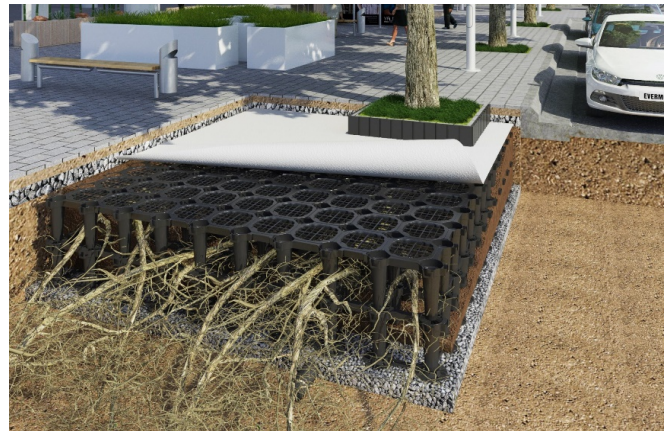


Figure 12.
Stratavault Soil Cells
Photo: citygreen.com

Pavement Suspension Systems

Pavement suspension systems were originally designed to suspend hardscape and pavement on soils that lacked the structural cohesion and qualities to support it. One adaptive and beneficial use for trees is in construction of new or expansion of roadways, walkways, and other pavement areas where trees currently exist. Instead of excavating areas to install beds of compaction-suitable material, pilings are driven in a systematic grid and topped with formwork where the desired pavement is installed (Figure 13). The pilings transfer the weight of the pavement down into the ground similar to piling foundations in building construction. The benefit of the system is that the pilings are driven into the ground with minimal disruption to existing tree root systems. An example of this system is the Cupolex system.



Figure 13.
Cupolex Pavement Suspension System
Photo: Pontarolo Engineering

Structural Soil

Structural soils are a specific, usually patented, soil mix that combines clay loam soil with various sized crushed stones (aggregates) and a hydrogel (binding agent), that can be compacted under pavement to give structural support. The aggregates allow for compaction of the structural soil, while creating gaps between the aggregate material for the clay loam soil and tree roots to grow (Figure 14). While it does not create the most optimum conditions for tree growth (when compared to soil cells), structural soils are best suited for compacted areas beneath hardscape improvements that are completely surrounded by large amounts of uncompacted soils and pervious areas. An example of a structural soil manufacturer/provider is the patented structural soil mix patented by Cornell University, termed CU-Structural Soil



Figure 14.

CU-Structural Soil

Photo: Urban Horticulture Institute, Cornell University

APPENDICES

APPENDIX A DATA COLLECTION AND SITE LOCATION METHODS

DATA COLLECTION METHODS

DRG collects tree inventory data using their proprietary GIS software, “Rover”, loaded onto pen-based field computers. At each site, the following data fields were collected:

- Address/Location
- Species
- Tree Size (measured in inches in diameter at 4.5 feet above ground or diameter at breast height (DBH))
- Multi-stem Tree
- Condition
- Primary Maintenance
- Defects
- Risk Rating
- Overhead Utilities
- Clearance Conflicts
- Date of Inventory

The knowledge, experience, and professional judgment of DRG’s arborists ensure the high quality of inventory data.

SITE LOCATION METHODS

Equipment and Base Maps

Inventory arborists use FZ-G1 Panasonic Toughpad® units with internal GPS receivers. Geographic information system (GIS) map layers from the City of Traverse City were loaded onto these units to help locate sites during the inventory.

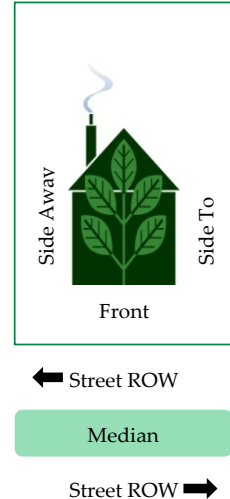
STREET ROW SITE LOCATION

Individual street ROW sites were located using a methodology that identifies sites by *address number, street name, side*, and *on street*. This methodology was used to help ensure consistent assignment of location.

Address Number and Street Name

Where there was no GIS parcel addressing data available for sites located adjacent to a vacant lot, or adjacent to an occupied lot without a posted address number, the arborist used their best judgment to assign an address number based on nearby addresses. An "X" was then added to the number in the database to indicate that it was assigned, for example, "37X Choice Avenue."

Sites in medians were assigned an address number by the arborist in Rover using parcel and streets geographical data. Each segment was numbered with an assigned address that was interpolated from addresses facing that median and addressed on that same street as the median. If there were multiple medians between cross streets, each segment was assigned its own address. The *street name* assigned to a site was determined by street centerline information.



Side Value

Each site was assigned a *side value*, including *front*, *side*, *median*, or *rear* based on the site's location in relation to the lot's street frontage. The *front* is the side facing the address street. *Side* is either side of the lot that is between the front and rear. *Median* indicates a median or island surrounded by pavement. The *rear* is the side of the lot opposite of the address street.

PARK AND PUBLIC SPACE SITE LOCATION

Park and/or public space site locations were collected using the same methodology as street ROW sites, however nearly all of them have the "Assigned Address" field set to 'X' and have the "Park Name" data field filled.

APPENDIX B

I-TREE STREETS METHODOLOGY

i-Tree Streets regionalizes the calculations of its output by incorporating detailed reference city project information for 16 climate zones across the United States. Big Rapids falls within the Midwest Climate Zone. Sample inventory data from Minneapolis represent the basis for the Midwest Reference City Project for the Midwest Community Tree Guidelines. The basis for the benefit modeling in this study compares the inventory data from Big Rapids to the results of Midwest Reference City Project to obtain an estimation of the annual benefits provided by Big Rapids' tree resource.

Growth rate modeling information was used to perform computer-simulated growth of the existing tree population for one year and account for the associated annual benefits. This "snapshot" analysis assumed that no trees were added to or removed from the existing population. Calculations of carbon dioxide (CO₂) released due to decompositions of wood from removed trees did consider average annual mortality. This approach directly connects benefits with tree-size variables such as diameter at breast height (DBH) and leaf-surface area. Many benefits of trees are related to processes that involve interactions between leaves and the atmosphere (e.g., interception, transpiration, photosynthesis); therefore, benefits increase as tree canopy cover and leaf surface area increase.

For each of the modeled benefits, an annual resource unit was determined on a per-tree basis. Resource units are measured as megawatt-hours of electricity saved per tree; therms of natural gas conserved per tree; pounds of atmospheric CO₂ reduced per tree; pounds of nitrogen dioxide (NO₂), particulate matter (PM₁₀), and volatile organic compounds (VOCs) reduced per tree; cubic feet of stormwater runoff reduced per tree; and square feet of leaf area added per tree to increase property values.

Prices were assigned to each resource unit using economic indicators of society's willingness to pay for the environmental benefits trees provide. Estimates of benefits are initial approximations as some benefits are difficult to quantify (e.g., impacts on psychological health, crime, and violence). In addition, limited knowledge about the physical processes at work and their interactions make estimates imprecise (e.g., fate of air pollutants trapped by trees and then washed to the ground by rainfall). Therefore, this method of quantification provides first-order approximations. It is meant to be a general accounting of the benefits produced by urban trees—an accounting with an accepted degree of uncertainty that can, nonetheless, provide science-based platform for decision-making.

A detailed description of how the default benefit prices are derived, refer to the *City of Minneapolis, Minnesota Municipal Tree Resource Analysis* (McPherson *et al.* 2005) and the *Midwest Community Tree Guide: Benefits, Costs, and Strategic Planning* (McPherson *et al.* 2009). i-Tree Streets' default values from the Midwest Climate Zone were used for air quality and stormwater benefit prices and local values were used for energy usage, aesthetics, and other benefits.

Benefit Prices Used by i-Tree Streets in the Analysis of Big Rapids' Tree Inventory

Benefits	Price	Unit	Source
Electricity	\$0.00759	\$/Kwh	Xcelenergy 2004
Natural Gas	\$0.0098	\$/Therm	Centerpoint Energy
CO ₂	\$0.0075	\$/lb	US EPA 2003
PM ₁₀	\$2.84	\$/lb	US EPA 2003
NO ₂	\$3.34	\$/lb	US EPA 2003
O ₃	\$3.34	\$/lb	US EPA 2003
SO ₂	\$2.06	\$/lb	US EPA 2003
VOCs	\$3.75	\$/lb	Ottinger and others
Stormwater	\$0.0046	\$/gallon	McPherson & Xiao
Aesthetic Value	\$218,000	Average Midwest Housing Price	TreeKeeper®

Using these prices, the magnitude of the benefits provided by the public tree resource was calculated based on the science of i-Tree Streets using DRG's TreeKeeper® inventory management software. For a detailed description of how the magnitudes of benefit prices are calculated, refer to the *Midwest Community Tree Guide: Benefits, Costs, and Strategic Planning* (McPherson et al. 2009)

TREEKEEPER BENEFIT CATEGORIES

- *Greenhouse Gas Benefits:* Estimates annual reduction in CO₂ via sequestration by trees combined with the lower emissions from power plants (measured in pounds [lbs.]) resulting from lower energy use. The i-Tree model accounts for CO₂ released as trees die and decompose as well as CO₂ released during the care and maintenance of trees.
- *Stormwater Benefits:* Estimates the annual gallons of runoff avoided from rainfall intercepted by tree leaves, which increases with total leaf surface area.
- *Energy Benefits:* Estimates the contribution of inventoried trees towards conserving energy by reducing natural gas use for heating in the winter (measured in therms [thm]) and reducing electricity use for air conditioning in the summer (measured in Kilowatt-hours ([kWh])).
- *Air Quality Benefits:* Estimates the total weight in lbs. of air pollutants (ozone [O₃], nitrogen dioxide [NO₂], sulfur dioxide [SO₂], particulate matter less than 10 micrometers in diameter [PM₁₀]) that are captured by trees or deposited on leaf surfaces as well as the reduced emissions from power plants (NO₂, PM₁₀, volatile organic compounds [VOCs], SO₂) due to reduced electricity use. The potential negative effects of trees on air quality due to biogenic volatile organic compounds (BVOC) emissions is also calculated, although these are relatively insignificant.
- *Property Value Benefits:* Uses leaf surface area to estimate the increased property value resulting from the tangible and intangible benefits that trees provide.

APPENDIX D: RECOMMENDED TREE SPECIES LIST

This species list is not inclusive of all trees recommended and/or suitable for Traverse City's climate; there are many native and non-native shade and ornamental trees that can be planted. When selecting tree species for planting - the diversity of tree species on individual streets, in neighborhoods, and in the entire community should be taken into consideration. The planting of a single species (monoculture) or genus should be avoided.



Downtown Traverse City Tree Species List*

Botanical Name	Common Name	Cultivar	Native to MI	Showy Flower	Type of Fruit/Seed	Drought Tolerance	Soil Drainage Tolerance	Soil Salt Tolerance	Salt Spray Tolerance	Soil pH	Shape	Mature Size	Mature Spread (feet)	Mature Height (feet)	Growth Rate	Open space/Parks	Tree Lawn (ROW) Width < 4'	Tree Lawn (ROW) Width 4 - 6'	Tree Lawn (ROW) Width > 6'	Suitable Under Overhead Wires
<i>Acer griseum</i>	Paperbark Maple		No	No	Samara (Winged Seed Pod)	Low	Moist to Well Drained	Mod	Mod	Acidic to Alkaline	Oval/Rounded	Small	20 to 30	20 to 30	Slow	●	●		●	
<i>Acer miyabei</i>	Miyabei Maple	State Street	No	No	Samara (Winged Seed Pod)	Mod	Moist to Well Drained	Mod	Mod	Acidic to Alkaline	Oval/Rounded	Medium	20 to 30	35 to 45	Mod		●			
<i>Aesculus x carnea</i>	Red Horsechestnut	Briotti; Ft. McNair	No	Yes	Nut	Mod	Moist to Well Drained	Poor	Mod	Acidic to Alkaline	Upright/Oval	Large	30 to 40	60 to 80	Mod		●	●		
<i>Amelanchier x grandiflora</i>	Serviceberry or Juneberry	Autumn Brilliance; Princess Diana	Yes	Yes	Drupe/ Berry	Low to Mod	Well Drained	Low	Low	Acidic to Neutral	Rounded	Small	10 to 15	10 to 25	Mod	●	●	●	●	
<i>Betula nigra</i>	River Birch	Single Stem varieties for streets	Yes	No	Catkin (Seed Pod)	High	Extended Flooding to Moist	Low	Mod	Acidic	Upright/Oval	Large	30 to 40	40 to 60	Fast	●	●	●		
<i>Corpinus betulus</i>	European Hornbeam	Fastigiata; Various	No	No	Catkin (Seed Pod)	Mod	Well Drained	Low	Low	Acidic	Oval	Small	20 to 30	10 to 30	Mod		●	●	●	●
<i>Carpinus caroliniana</i>	American Hornbeam		Yes	No	Catkin (Seed Pod)	Mod	Moist to Well Drained	Low	Low	Acidic	Upright	Small	20 to 30	20 to 30	Mod	●	●	●	●	
<i>Celtis occidentalis</i>	Eastern Hackberry		Yes	No	Drupe/ Berry	Mod	Occasionally Wet to Well Drained	Mod	Mod	Acidic	Rounded	Large	40 to 50	60 to 70	Fast	●		●		
<i>Cercidiphyllum japonicum</i>	Katsuratree		No	No	Small Seed Pod	Low	Moist	High	High	Acidic to Slightly Alkaline	Upright to Pyramidal	Large	30 to 40	40 to 60	Mod			●		
<i>Cercis canadensis</i>	Redbud	Various	Yes	Yes	Seed Pod	Mod	Moist to Well Drained	Low	Low	Neutral to Alkaline	Rounded	Small	15 to 25	15 to 30	Mod	●	●	●	●	
<i>Cladrastis kentukea</i>	American Yellowwood		Yes	Yes	Seed Pod	Mod	Well Drained	Low	Low	Acidic to Alkaline	Rounded/Vase	Medium	20 to 50	30 to 50	Slow		●	●		
<i>Crataegus crus-galli var. inermis</i>	Thornless Hawthorn	Thornless variety	Yes	Yes	Drupe/ Berry	Yes	Moist to Well Drained	High	Mod	Acidic to Alkaline	Rounded/ Spreading	Small	20 to 25	15 to 20	Mod	●	●		●	
<i>Cornus kousa</i>	Kousa dogwood		No	Yes	Drupe/ Berry	Low	Moist to Somewhat Well Drained	Low	Low	Acidic to Neutral	Rounded/Vase	Small	15 to 30	15 to 30	Mod		●	●	●	●
<i>Gleditsia triacanthos var inermis</i>	Thornless Honeylocust	Various Thornless varieties	Yes	No	None (cultivated varieties)	High	Moist to Well Drained	High	High	Acidic to Alkaline	Rounded	Large	30 to 70	40 to 70	Fast	●	●	●		
<i>Ginkgo biloba</i>	Ginkgo	male trees only	No	No	None (male only)	High	Moist to Well Drained	High	High	Acidic to Alkaline	Round/Pyramidal	Large	30 to 60	50 to 75	Slow		●	●		
<i>Gymnocladus dioica</i>	Kentucky Coffeetree		Yes	No	Seed Pod	High	Moist to Well Drained	Mod	High	Acidic to Alkaline	Upright to Rounded	Large	40 to 70	50 to 70	Fast	●	●	●		



Downtown Traverse City Tree Species List*

Botanical Name	Common Name	Cultivar	Native to MI	Showy Flower	Type of Fruit/Seed	Drought Tolerance	Soil Drainage Tolerance	Soil Salt Tolerance	Salt Spray Tolerance	Soil pH	Shape	Mature Size	Mature Spread (feet)	Mature Height (feet)	Growth Rate	Open space/Parks	Tree Lawn (ROW) Width < 4'	Tree Lawn (ROW) Width 4 - 6'	Tree Lawn (ROW) Width > 6'	Suitable Under Overhead Wires
<i>Liquidambar styraciflua</i>	Sweetgum	Rotundiloba (fruitless variety)	Yes (S. MI)	No	Spiked Ball/ None (cultivated variety)	Mod	Extended Flooding to Well-Drained	Low	Mod	Acidic to Slightly Alkaline	Pyramidal/Oval	Large	35 to 50	60 to 75	Mod	•			•	
<i>Uriodendron tulipifera</i>	Tuliptree		Yes	Yes	Cone-like	Low	Moist to Well Drained	Low	Low	Acidic to Neutral	Pyramidal/Oval	Large	35 to 50	70 to 90	Fast	•			•	
<i>Morus spp.</i>	Crabapple	Sugar Tyme; Prairie Fire; Various	No	Yes	Drupe/ Berry (Fruitless cultivars)	High	Moist to Well Drained	Low	Low	Acidic to Alkaline	Rounded	Small	20 to 25	20 to 25	Mod		•	•	•	•
<i>Metasequoia glyptostroboides</i>	Dawn Redwood		No	No	Cone-like	Low	Occasionally wet to Moist.	Low	Low	Acidic to Neutral	Upright Pyramidal	Large	20 to 30	60 to 80	Fast				•	
<i>Nyssa sylvatica</i>	Blackgum		Yes	No	Drupe/ Berry	Low	Extended Flooding to Well-Drained	Low	High	Acidic	Pyramidal / Oval	Medium	25 to 35	30 to 50	Slow	•			•	
<i>Ostrya virginiana</i>	American Hophornbeam		Yes	No	Cluster of winged-seeds; Look like	High	Moist to Well Drained	Mod	Low	Acidic to Alkaline	Oval	Medium	25 to 30	25 to 40	Slow	•		•		•
<i>Platanus x acerifolia</i>	London Planetree	Bloodgood; Various	No	No	Spiked Ball	Mod	Extended Flooding to Well-Drained	Mod	Mod	Acidic to Alkaline	Pyramidal / Rounded	Large	50 to 70	75 to 90	Mod	•			•	
<i>Platanus occidentalis</i>	Sycamore		Yes	No	Spiked Ball	Mod	Extended Flooding to Well-Drained	Mod	Mod	Acidic to Alkaline	Pyramidal / Rounded	Large	50 to 70	75 to 90	Fast	•			•	
<i>Prunus sargentii</i>	Sargent Cherry		No	Yes	Drupe/ Berry	Mod	Moist to Well Drained	High	Mod	Acidic to Neutral	Vase/Round	Small	30 to 50	20 to 30	Mod	•		•		
<i>Prunus serrulata</i>	Kwanzan Cherry	Kwanzan	No	Yes	None	Mod	Moist to Well Drained	Low	Mod	Acidic to Slightly Alkaline	Upright/Vase	Small	15 to 25	15 to 25	Mod	•		•		•
<i>Prunus subhirtella</i>	Higan Cherry		No	Yes	Drupe/ Berry	Mod	Moist to Well Drained	Low	Low	Acidic to Neutral	Vase	Small	25 to 35	25 to 35	Mod	•		•		•
<i>Prunus x yedoensis</i>	Yoshino Cherry		No	Yes	Drupe/ Berry	Mod	Moist to Well Drained	Low	Low	Acidic to Neutral	Vase	Medium	25 to 40	40 to 50	Mod	•		•		
<i>Quercus bicolor</i>	Swamp White Oak		Yes	No	Acorn	High	Extended flooding to Well Drained	Mod	Mod	Acidic to Slightly Alkaline	Upright Oval / Rounded	Large	50 to 60	50 to 70	Mod	•			•	
<i>Quercus macrocarpa</i>	Bur Oak		Yes	No	Acorn	High	Moist to Well Drained	High	High	Acidic to Alkaline	Upright Oval / Spreading	Large	40 to 60	60 to 70	Slow	•			•	
<i>Quercus imbricaria</i>	Shingle Oak		Yes	No	Acorn	Yes	Moist to Well Drained	Mod	Mod	Acidic to Alkaline	Pyramidal/Rounded	Large	40 to 60	40 to 60	Mod	•			•	
<i>Quercus rubra</i>	Northern Red Oak		Yes	No	Acorn	High	Moist to Well Drained	High	Low	Acidic to Slightly Alkaline	Rounded	Large	60 to 80	50 to 60	Fast	•			•	

TRAVERSE CITY TREE SELECTION GUIDE

Revised 12/11/2012

SITUATION : Residential area
 Low salt use
 Treelawn 4-6 feet
 Overhead utility wires

<u>Latin Name</u>	<u>Common Name</u>	<u>Suggested Cultivars</u>
Acer glabrum	Rocky Mountain Maple	
Acer grandidentatum	Big Tooth Maple	'Rocky Mountain Glow'
Acer griseum	Paperbark Maple	'Ginzam' (Gingerbread)
Acer pensylvanicum	Striped Maple	
Acer pseudosieboldianum	Korean Maple	
Acer saccharum 'Barrett Cole'	Apollo Maple	
Acer saccharum 'Sugar Cone'	Sugar Cone Maple	
Acer tegmentosum	Manchustriped Maple	
Acer triflorum	Three-Flower Maple	
Alnus rugosa	Speckled Alder	
Amelanchier spp.	Serviceberry	'Robin Hill', 'Cole Form' 'Autumn Brilliance', 'Tradition' 'Cumulus', 'Snow Cloud' 'Princess Diana', 'Spring Glory'
Carpinus caroliniana	American Hornbeam	
Carpinus japonicus	Japanese Hornbeam	
Cercidiphyllum japonicum 'Pendula'	Weeping Katsura	
Cercis canadensis	Eastern Redbud	
Chionanthus retusus	Chinese Fringetree	
Chionanthus virginicus	White Fringetree	
Cornus alternifolia	Pagoda Dogwood	
Cornus kousa	Kousa Dogwood	'Chinensis', 'Milky Way' 'Summer Stars', 'Select'
Cornus racemosa	Grey Dogwood	
Cotinus obovatus	American Smoketree	'Red Leaf'



Downtown Traverse City Tree Species List*

Botanical Name	Common Name	Cultivar	Native to MI	Showy Flower	Type of Fruit/Seed	Drought Tolerance	Soil Drainage Tolerance	Soil Salt Tolerance	Salt Spray Tolerance	Soil pH	Shape	Mature Size	Mature Spread (feet)	Mature Height (feet)	Growth Rate
<i>Syringia reticulata</i>	Japanese Tree Lilac	Ivory Silk	No	Yes	Small Seed Cluster	High	Moist to Well Drained	High	High	Acidic to Alkaline	Oval to Rounded	Small	15 to 20	20 to 30	Mod
<i>Taxodium distichum</i>	Bald Cypress		No	No	Seed Ball	High	Extended Flooding to Well-Drained	High	High	Acidic to Slightly Alkaline	Pyramidal	Large	25 to 35	60 to 80	Fast
<i>Tilia americana</i>	American Linden		Yes	Yes	Seed Pod	Mod	Moist to Moderately Well Drained	Low	Low	Slightly Acidic to Alkaline	Rounded	Large	30 to 50	50 to 80	Mod
<i>Tilia cordata</i>	Little-leaf Linden	Greenspire	No	Yes	Seed Pod	Mod	Moist to Moderately Well Drained	Low	Low	Slightly Acidic to Alkaline	Pyramidal to Rounded	Large	30 to 40	40 to 60	Mod
<i>Tilia tomentosa</i>	Silver Linden		No	Yes	Seed Pod	High	Moist to Moderately Well Drained	Low	Low	Acidic to Alkaline	Broad Columnar	Large	30 to 50	50 to 70	Mod
<i>Ulmus americana</i>	American Elm	Valley Forge; Princeton	Yes	No	Winged Seed Pod	Mod	Extended Flooding to Well-Drained	High	Mod	Acidic to Alkaline	Vase	Large	50 to 70	70 to 90	Fast
<i>Ulmus X</i>	Hybrid Elm	Patriot; Triumph; Accolade	No	No	Winged Seed Pod	High	Extended Flooding to Well-Drained	High	High	Acidic to Alkaline	Vase	Large	30 to 45	40 to 60	Fast
<i>Zelkova serrata</i>	Zelkova	Green Vase; Village Green	No	No	Small Seeds	Mod	Moist to Moderately Well Drained	Low	Low	Acidic to Slightly Alkaline	Vase	Large	40 to 50	60 to 80	Mod

*This species list is not inclusive of all trees recommended and/or suitable for Traverse City's climate; there are many native and non-native shade and ornamental trees that can be planted. When selecting tree species for plant diversity of tree species on individual streets, in neighborhoods, and in the entire community should be taken into consideration. The planting of a single species (monoculture) or genus should be avoided.

Tree species highlighted in blue are native species that are also listed on the City of Traverse City's Tree Selection Guide (revised 12/11/2012)

Tree Selection Resources:

Cornell University Woody Plants Database <http://woodyplants.cals.cornell.edu/home>
 Michigan State University Extension, https://www.canr.msu.edu/home_gardening/trees-shrubs/
 Missouri Botanical Garden Plant Finder <https://www.missouribotanicalgarden.org/plantfinder/plantfindersearch.aspx>
 Morton Arboretum Trees and Plant Finder <https://mortonarb.org/plant-and-protect/search-trees-and-plants/>
 University of Illinois Extension Tree Selector Tool <https://web.extension.illinois.edu/treeselector/search.cfm>

Malus spp.	Crabapple	'Red Baron', 'Lancelot' 'Golden raindrops' 'Purple Prince', 'Spring Snow' 'Pinkspire', 'Sentinel'
Parrotia Persica	Persian Parrotia	'Ruby Vase'
Prunus virginiana	Choke Cherry (Canada Red Select)	'Shubert'
Pyrus fauriei 'Westwood'	Korean Sun Pea Pear	
Pterostyrax hispida	Epaulette Tree	
Syringa reticulata	Tree Lilac	'Ivory Silk'
Quercus gambelii	Gamble Oak	
Zelkova serrata 'Wireless'	Compact Zelkova	

SITUATION : Residential area
Low salt use
Treelawn 4-6 feet
No overhead utility wires

<u>Latin Name</u>	<u>Common Name</u>	<u>Suggested Cultivars</u>
Acer davidii	Striped-bark Maple (David)	
Acer mandshuricum	Manchurian Maple	
Acer rubrum 'Brandywine'	Brandywine Red Maple	
Carpinus betulus	European Hornbeam 'Frans Fontaine'	'Fastigiata'
Halesia carolina	Carolina Silverbell	'Meehanii', 'Rosea'
Liquidambar styraciflua 'Clydesform'	Emerald Sentinel Sweetgum	
Magnolia denudata (M. heptapeta)	Yulan Magnolia	
Ostrya virginiana	Hophornbeam	
Tilia cordata 'Chancole'	Chancellor Linden	

SITUATION : Residential area
Moderate to high salt use
Treelawn 4-6 feet
No overhead utility wires

<i>Gleditsia triacanthos inermis</i>	Thornless Honeylocust	'Skyline' 'Halka' 'Sunburst' 'Imperial'
<i>Koelreuteria paniculata</i>	Goldenrain Tree	
<i>Nyssa sylvatica</i>	Black Gum (Tupelo)	'Red Range' 'Wildfire'
<i>Zelkova serrata</i>	Zelkova	'Village Green' 'Green Vase'

SITUATION : Residential area
Low salt use
Treelawn greater than 8 feet
No overhead utility wires

<u>Latin Name</u>	<u>Common Name</u>	<u>Suggested Cultivars</u>
<i>Acer nigrum</i>	Black Maple	
<i>Acer rubrum</i>	Red Maple	'Autumn Flame', 'Firefall' 'Northfire' 'Northwood' 'October Glory', 'Supersonic'
<i>Acer saccharum</i>	Sugar Maple	'Green Mountain', 'Legacy' 'Fall Fiesta', 'Seneca Chief' 'Commemoration'
<i>Aesculus flava</i> (A. octandra)	Yellow Buckeye	
<i>Castanea mollissima</i>	Chinese Chestnut	
<i>Fagus grandifolia</i>	American Beech	
<i>Fagus sylvatica</i>	European Beech	'Asplenifolia' 'Atropunicea'
<i>Liquidambar styraciflua</i>	Sweetgum	'Burgundy' 'Moraine' 'Cherokee' 'Festival' 'Worplesdon'
<i>Liriodendron tulipifera</i>	Tulip Tree	
<i>Tilia americana</i>	American Basswood	'Boulevard' 'Legend' 'Redmond' 'Sentry'
<i>Tilia x euchlora</i>	Crimean Linden	
<i>Tilia heterophylla</i>	Beetree Linden	'Continental'
<i>Tilia platyphyllos</i>	Bigleaf Linden	

SITUATION : Residential area
Moderate to high salt use
Treelawn greater than 8 feet
No overhead utility wires

Ulmus spp.	Hybrid Elm	'Princeton', 'Accolade' 'Valley Forge', 'Regal', 'Frontier' 'Pioneer', 'Homestead' 'Sapporo Autumn Gold'
Ulmus wilsoniana	Wilson Elm	'Prospector'
Zelkova serrata	Japanese Zelkova	'Green Vase', 'Village Green'

SITUATION : Limited space for tree crown
Low salt use
Treelawn greater than 6 feet
No Overhead utility wires

<u>Latin Name</u>	<u>Common Name</u>	<u>Suggested Cultivars</u>
Acer nigrum	'Green Column'	Green Column Black Maple
Acer rubrum	Red Maple	'Autumn Spire' 'Brandywine', 'Bowhall'
Acer saccharum 'Endowment'	Endowment Sugar Maple	
Carpinus betulus	European Hornbeam	'Fastigiata', 'Frans Fontaine'
Fagus sylvatica 'Fastigiata'	Pyramidal European Hornbeam	
Liriodendron tulipifera	Tuliptree	'Arnold', 'Fastigiatum'
Tilia cordata 'Corinthian'	Corinthian Linden	

SITUATION : Limited space for tree crown
Moderate to high salt use
Treelawn greater than 6 feet
No overhead utility wires

<u>Latin Name</u>	<u>Common Name</u>	<u>Suggested Cultivars</u>
Acer x freemanii	Freeman Maple	'Armstrong', 'Scarlet Sentinel'
Alnus glutinosa 'fastigiata'	Pyramidal Black Alder	
Corylus columna	Turkish Filbert	
Ginkgo biloba	Maidenhair Tree	'Lakeview', 'Magyar' 'Princeton Sentry', 'Saratoga'
Koelreuteria paniculata 'Fastigiata'	Pyramidal Goldenrain tree	
Quercus alba x robur	Hybrid Oak	'Crimson Spire'
Quercus robur	English Oak	'Attention', 'Fastigiata', 'Skymaster' 'Skyrocket', 'Regal Prince'
Zelkova serrata 'Musashino'	Musashino Zelkova	

<i>Celtis occidentalis</i>	Hackberry	'Prairie Pride', 'Magnifica'
<i>Ginkgo biloba</i>	Maidenhair Tree	'Princeton Sentry' 'Magyar', 'Lakeview'
<i>Gleditsia triacanthos inermis</i>	Thornless Honeylocust	'Halka', 'Skyline', 'Imperial'
<i>Gymnocladus dioica</i>	Kentucky Coffeetree	'Prairie Titan', 'Stately Manor' 'Expresso', 'J.C. McDaniels'
<i>Koeleruteria paniculata</i>	Goldenrain Tree	'September', 'Rose Lantern'
<i>Quercus imbricaria</i>	Shingle Oak	
<i>Sophora japonica</i>	Pagoda Tree	'Regent', 'Upright', 'Princeton'
<i>Tilia cordata</i>	Littleleaf Linden	'Glenleven', 'Shamrock'
<i>Ulmus parvifolia</i>	Lacebark Elm	'Ohio', 'Pathfinder', 'Burgandy' 'Dynasty', 'Emerald Isle' 'Emerald Vase'

SITUATION : Sidewalk pits
Overhead utility wires

<u>Latin Name</u>	<u>Common Name</u>	<u>Suggested Cultivars</u>
<i>Malus spp.</i>	Crabapple	'Red Baron', 'Sentinel'
<i>Syringa reticulata</i>	Tree Lilac	'Ivory Silk'

SITUATION : Sidewalk pits
No overhead utility wires

<u>Latin Name</u>	<u>Common Name</u>	<u>Suggested Cultivars</u>
<i>Ginkgo biloba</i>	Maidenhair tree	'Magyar', 'Lakeview' 'Princeton Sentry'
<i>Gleditsia triacanthos inermis</i>	Thornless Honeylocust	'Skyline'

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Downtown Development Authority
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231-922-2050

Memorandum

To: Downtown Development Authority Board

From: Jean Derenzy, DDA CEO

Date: September 13, 2021

Subject: Project Updates

East Front Street

Our next round of public meetings for the *Reimagine East Front* Project will be held on Monday, September 27th and Wednesday, September 29th. Monday's meetings will be held in person. Two public workshops are also planned for Monday, the first beginning at 12:00 PM and the second beginning at 6:00 PM. Wednesday's meetings will be virtual meetings only.

This next round of public meetings will provide an opportunity to examine and discuss the pros and cons of three potential design scenarios for East Front Street as well as three scenarios for two-way streets throughout downtown. The six potential scenarios were derived from the results of a traffic study and feedback from the first round of public engagement.

As a reminder, this project includes plans for underground infrastructure (including new sewer leads to existing buildings) along East Front Street. The project team is also conducting a downtown traffic study to determine the potential conversion of Front Street and State Street from one-way operation to two-way operation. In addition, we are working closely with MDOT to influence the design for the East Front Street/Grandview Parkway intersection as well as other connections along Grandview Parkway (MDOT will be reconstructing Grandview Parkway in 2023).

Educational Uses in Downtown

Our office is working with the City's planning office to examine what changes are needed to the zoning ordinance to allow educational institutions the ability to locate downtown. The City Planning Commission has scheduled a public hearing on this allowed use for Tuesday, October 5th.

Educational institutions, including universities, provides an opportunity to bring youth/young adults to downtown and become stewards of the community; schools

contribute to community/downtown; as well as higher education brings possible innovation spin-offs for Downtown.

Clean & Green Initiatives

Staff is working to identify options on ways to keep downtown “clean and green”, especially throughout the spring and summer months.

Sidewalks

Staff is working to secure an in-person demonstration of a mobile sweep/vacuum/wash/cleaning unit for our sidewalks. The mobile sidewalk cleaner (made by Madvac) has the ability to apply a “dry and wet” sweep of sidewalks. It is also fashioned with a power-washer to clean especially dirty and sticky areas. A brochure for the MADVAC LS175 is provided in your packet.

Weeds and Tree Grates

The weeds and external growth within many of the tree grates throughout downtown, as well as in cracks within the sidewalks have become quite extensive. This past summer, we worked with YouthWork Industries (part of Child and Family Services of Northwest Michigan) to pull weeds and clean tree-grates throughout downtown. This one-time service was greatly appreciated and very helpful for a short period, but consistent weed mitigation throughout the summer is needed. Staff is exploring long-term maintenance options (and costs) with local landscaping firms.

Trash Containers

Staff is working with the City’s DPS Department and “Bigbelly” to assess our current waste and recycling operations within the downtown – with the goal of developing a proposal to install “Bigbelly” containers throughout the downtown district. A Bigbelly container is a self-contained solar-powered waste compactor that can hold up to 10-times the amount of waste of a traditional container. In addition, the enclosed system helps to keep trash from blowing away or pulled out by seagulls. The DDA employed one of these Bigbelly containers as a “pilot” roughly 5 years ago. A brochure for the Bigbelly system is provided in your packet.

Seagulls

Staff is researching methods to deter seagulls from nesting on the roofs of downtown buildings. Options include everything from a noise deterrence mechanism to waving flags. Keeping dumpsters (and trash) enclosed will also help eliminate the number of seagulls downtown.

Graffiti

DDA staff has been asked to participate on an internal committee with the city to identify, document and mitigate graffiti throughout the downtown. While graffiti is a persistent problem in areas throughout the city, there is a significant concentration in the downtown area.

Downtown Business Database

As has been discussed several times, and noted within our strategic plan, we (or any agency) do not have a comprehensive database for downtown businesses and property owners. Staff is working on a Request for Proposal (RFP) for services to assist in developing a comprehensive database for downtown. This database would likely involve three primary components: (1) contact information (besides mailing address) for each property owner; (2) a comprehensive property database with more information than what can be found in through the assessors office (e.g., size of buildings, number of occupants, etc.) and; (3) a comprehensive business and job dashboard – similar to “downtown census”, we would like to identify: how many businesses (w/square footage), employees, business types; residents, annual sales, average rent, etc. are in the downtown.

The database will provide a “baseline” which the DDA can track over time to better understand shifts and/or trends in the downtown market.

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- Pathways
- Alongside buildings
- Public markets



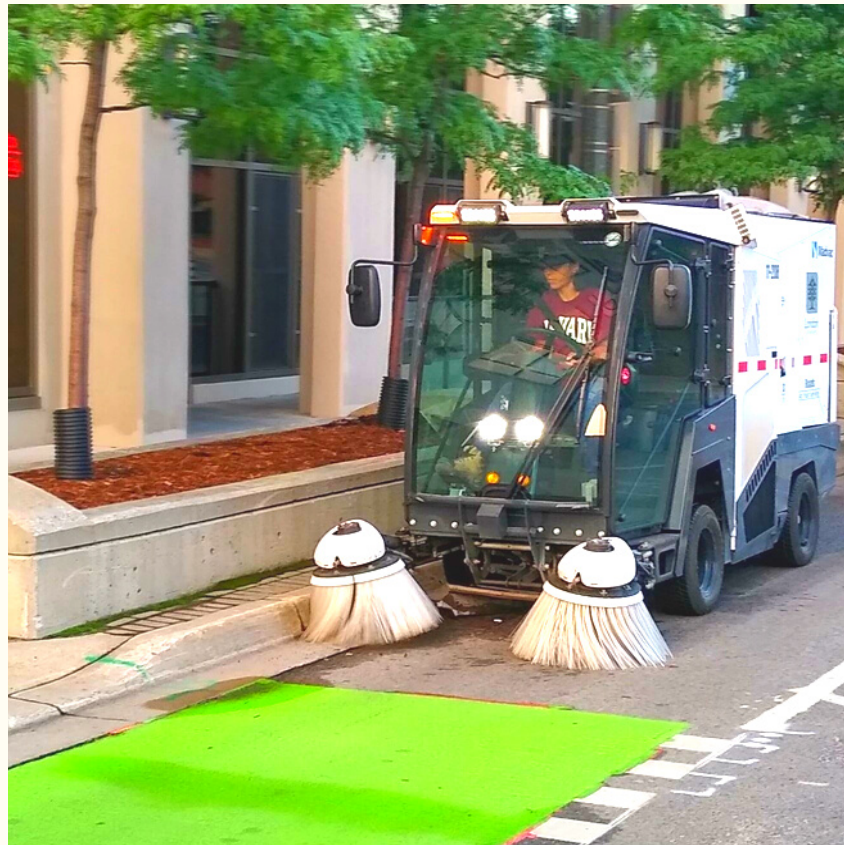
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- LS175 is the ONLY 48" wide closed cabin high-dump sweeper manufactured in North America. Everything is built according to North American standards;
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- 10 to 12 year lifespan will outlast most competitive models;



- A CDL permit is not required to operate this machine;
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- Madvac has a 30+ years track record of success - when your machine is due for replacement we'll still be around.



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Diesel / Gas -> LS175 -> Request a quote**



Madvac LS175

Data & Performance Information

Capacities	
Fuel tank	21.1 gal. (80 L)
Hydraulic system	23.7 gal. (90 L) ISO46
Litter capacity	1.75 cu. yd. (1.34 m3) (353 gal.)
Engine Data	
Model	Hatz Tier 4 Final engine 3H50TIC 3 cyl. turbo with CAC/DOC only Bosch controller with in-cab troubleshooting switch and light
Displacement	91.54 cu. in. (1500 cc)
Gross rated power	58.5 HP (44.0 kW) @ 2800 RPM
Air cleaner	Donaldson 2-stage filtration system
Litter Collection System	
Type	3-stage filtration process - water, rotary filter, bag (or cartridge)
Frame / body	Triangular frame tubing for engine 0.25" (6.35 mm) / 13 gauge fully welded / reinforced steel
Container material	Stainless steel
Dumping height	67 in. (1702 mm)
Container payload	2000 lbs (907 kg)
Power wash	Pressure washer 1800 psi (optional)
Vacuum System	
Vacuum rating	2000 CFM
Remote vacuum	4 in. (101 mm) X 15 ft. (4.57 m) stowed wander hose (optional)
Traction	
Drive	Rear wheel drive fully controlled by electric pedal
Forward speed	15 mph (24 km/h)
Tires	Radial 225 R 12 on all 4 wheels
Brakes	Front hydraulic standard brakes; rear hydrostatic brakes; rear mechanical parking disk brakes
Gradeability	11.3 deg. (20%)
Curb weight	Dry 5500 lbs (2495 kg)
Suspension	
Front	Two coil springs / heavy duty shock absorbers
Rear	Two coil springs / heavy duty shock absorbers on axel

Sweep Gear	
Brushes	Two brushes (independently joystick controlled) 25 in. (635 mm) diameter each polypropylene
Sweeping width	From 44 in. (1118 mm) to 80 in. (2032 mm)
Pickup nozzle	Electric raise/lower with polymer skate and wheels
Brush speed	0 RPM to 150 RPM
Brush arm	Floating and adjustable
In-cab	Brush speed & down pressure
Electrical	
Lighting	2 headlights; 2 hazard lights; 4 work lights; 4 strobe lights; side panel light; brakes, turn, reverse signals, SMV sign
Instruments	Hour meter, fuel gauge, no water indicator, brake indicator, left turn signal, engine oil indicator, battery indicator, engine temperature indicator, right turn signal, glow plug indicator, engine maintenance required
Cab	
Cab	200-degree cab vision
Windshield	Full windshield laminated glass
Windows	Full ventilation, pivoting side windows that open each side
Light	Interior dome light
Heating / AC	HVAC unit
Defrost	Windshield heated micro filament (optional) Heated mirrors (optional)
Seat	Adjustable suspended air seat with 3-point seat belt
Dimensions	
Width	48 in. (1219 mm)
Length	136 in. (3454 mm)
Height	86 in. (2184 mm) for bag filtration system 88 in. (2235 mm) for cartridge filtration system
Wheelbase	65 in. (1651 mm)
Ground clearance	8.5 in. (216 mm)
Hydraulic System	
Drive system	Heavy duty hydrostatic drive with infinite movement engine following RPM with anti-stall

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Website: www.madvac.com

Sourcewell (US) and **Canoe** (Canada) contract vendor number: **122017-EXP**



Bigbelly provides a public
right-of-way platform to deliver
Smart City solutions and host
communications infrastructure



Bigbelly Smart Solutions for Cities

The World Leading Smart
Waste & Recycling System

The Bigbelly Platform

Communities and solution providers share the challenge of how and where to deploy Smart City solutions and communications infrastructure in the public right-of-way without additional clutter or negative aesthetic impact.



Bigbelly is a platform deployed in the public right-of-way that delivers much more than smart waste & recycling. In addition to modernizing a core city service, it is optimal for hosting additional technologies. It is easy to access and can hide technology in plain sight.



Solutions for Smart Cities

Municipalities are driven to deploy solutions that encourage citizen engagement, solve operational problems, and deliver meaningful data that can lead to improved services. Bigbelly enables cities, towns, business improvement districts (BIDs), parks, and transit systems to transform a core city service and leverage a multi-purpose platform to beautify public spaces.

Solutions for Campuses

Colleges and universities strive to deploy solutions that keep their campus clean, showcase commitment to sustainability, and solve meaningful operational problems with data. From Ivy Leagues to Community Colleges, campuses leverage Bigbelly to transform their public spaces, enhance service delivery, and improve the quality of life for students, staff, and visitors.



Solutions for Retail & Venues

Retailers and venues use Bigbelly to automate much of the work needed to manage the all-too-frequent task of front-of-house trash & recycling collection. Office buildings, hospitality, healthcare facilities, and other businesses are increasing productivity, showcasing their commitment to sustainability, and enhancing the overall customer experience with Bigbelly.

System Overview & Benefits



Bigbelly Smart Waste & Recycling System *Modernizing Public Space Waste Management*

Bigbelly is the world leader of smart waste & recycling solutions for public spaces. Communities deploy smart, solar-powered, sensor-equipped waste & recycling stations that communicate their real-time status to streamline waste management operations.

- > Suite of smart, connected waste & recycling stations keep waste contained and report fullness status to collection crews to enable increased productivity.
- > A cloud-connected platform for managing public space waste and providing actionable insights into ongoing operations and daily collection routine.
- > Customers experience up to 80% collection reduction in addition to cleanliness, operational, economic, and environmental benefits with the Bigbelly system.



Cleaner Public Spaces

Bigbelly transforms public space cleanliness and aesthetics with total waste containment - eliminating overflows, visible waste, windblown litter, and critter access. Create cleaner, greener, safer pedestrian spaces with reduced truck traffic, noise & congestion.



No Windblown Litter
or Access for Critters



Total Waste
Containment



No Overflows
or Visible Waste

Increased Productivity

Communities experience up to 80% collection reductions with a smart waste fleet and compaction technology. This results in decreased truck rolls, vehicle wear, and fuel consumption. Informed decision making with data and analytics enables labor to be reallocated to more meaningful projects.



Increased Capacity
(5x Traditional Bin)



Automated Real-Time
Collection Notifications



Operational Insights,
Analytics & Reporting

Measurable Sustainability

Introduce and measure the diversion rate of a public space recycling program. Bigbelly offers multiple streams at each station to encourage proper recycling. Reduce carbon footprint & greenhouse gas emissions with decreased fuel usage and vehicle pollution.



Measurable Recycling
Diversion Rates



Uniform Public Space
Recycling Programs



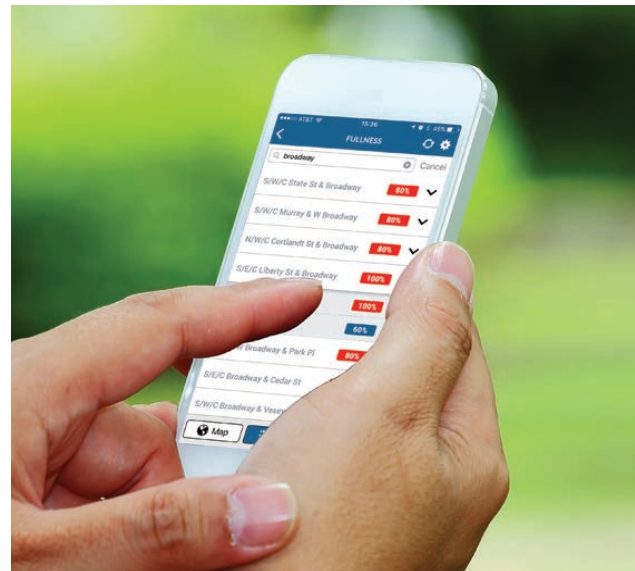
Reduced Pollution
& Carbon Footprint

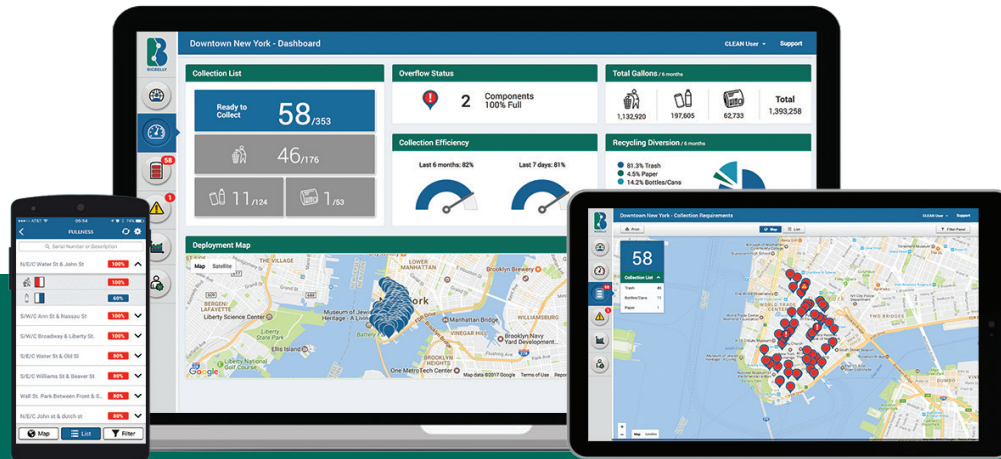
Software Overview

Cloud-Connected Platform for Smart Waste Management

CLEAN Management Console Software is the cornerstone of the Bigbelly Smart Waste & Recycling System, providing full visibility into an entire operation. This is the centralized location from which the system is managed and operational analysis can be done. It includes a set of tools for system setup, management, monitoring, and optimization from either a web-based software or mobile app.

- Smart stations communicate real-time status directly into CLEAN Management Console.
- Auto-generated email, text, and online notifications indicate which stations need to be collected to drive increased productivity while eliminating overflows and unnecessary collections.
- Users can optimize collection routines, measure and benchmark operations, and realize location-based waste patterns (volume, fill rate, collection activity) across a Bigbelly smart waste fleet.





CLEAN Management Console Software

- Centralized Dashboard with Real-Time Collection Requirements & Metrics
- Real-Time Station Status Based On Percent Fullness and Age
- Auto-Generated Notifications Trigger Collections Exactly When Needed
- Reliable and Easy-to-Use Web-Based Software; No IT Setup Required
- Data Export Capability and APIs to Support External Dashboards
- Suite of Reports to Analyze and Benchmark Operations Over Time
- Measure and Report on Recycling Diversion Rates per Waste Stream
- Customizable Asset Management & Role-Based User Administration
- Anytime, Anywhere Access via Mobile App for iOS and Android Devices



Station Overview

Suite of Smart, Connected Waste & Recycling Stations

Each Bigbelly deployment is comprised of a customized fleet of smart waste & recycling stations. An assessment of the unique challenges and needs of each public space determines the best suited combination of capacity, waste stream, and accessories/options. Stations can be configured as standalone single stations or as multi-stream double or triple stations to accommodate each community's waste stream collections. The full suite of smart stations are field-proven to be durable and street-tough across all environmental conditions.



Two capacities (high & standard) are available to match the varying waste volume needs in every location.



Stations are self-powered (compactors are solar-powered) & do not require connection to an electrical grid.



Each smart station analyzes and monitors its status to make decisions about communications, fullness & alerts.



Sensors located inside each station continuously measure the fullness status, door opens, and collection activity.



On-board GPS provides accurate and up-to-date geolocation for the most precise location-based data.



Smart stations communicate their real-time status and activity to the cloud management system via cellular connection.





High Capacity Stations

Smart, Solar-Powered Compacting Model

- Senses & Communicates Fullness Level
- Capacity: 150 Gallons (~570 liters)
- Built-in Compactor (5:1 Compaction Ratio)
- Enclosed Design with Hopper

Standard Capacity Stations

Smart, Self-Powered Non-Compacting Model

- Senses & Communicates Fullness Level
- Capacity: 50 Gallons (~190 liters)
- Enclosed Design with Flap

Multi-Stream Configurations

Stations are modular and support any combination of waste streams at each location.

Waste Streams Available: Trash, Single Stream, Bottles & Cans, Paper, and Compost/Organics.

Options & Accessories

- Foot Pedal for Hands-Free Use
- Wheeled Interior Lift Bin
- Graphic Wraps, Message Panels and Stickers
- Ashtray and Stub-Out Plates
- Security System with Physical Plates
- External A/C Adapter for Indoor Use



Bigbelly Provides a Public Right-of-Way Platform to Deliver Smart City Solutions and Host Communications Infrastructure

Communities deploy the Bigbelly Smart Waste & Recycling System to eliminate the common challenges of managing public space waste. They can take advantage of required public waste infrastructure as a host location for other applications and equipment.



Deployed in the Public Right-of-Way “Where the People Are”

Stations are densely installed across public spaces to keep communities clean and to capture waste where the people are. Cities can take advantage of shared space in the stations to deploy other technologies without adding clutter in dense urban areas.



Hide Applications and Infrastructure in Plain Sight

The core waste infrastructure has a proven form factor and offers a multi-purpose platform capable of hosting Smart City technologies. City-wide deployments enhance the urban experience without negative aesthetic impact by hiding equipment in plain sight.



Smart Waste & Recycling System

The core smart waste & recycling system includes smart stations on the street which communicate their status into an cloud-connected software to drive up to 80% collection reduction and cleaner spaces.



Wi-Fi Hotspots

The smart station form factor doubles as a sealed location to conceal a Wi-Fi hotspot in the public right-of-way. No plugs or grid power are required for instant Internet access with up to 200' signal radius.



Location-Based Beacons

A beacon network can be deployed within a smart waste & recycling fleet to deliver location-based messages and notifications, such as neighborhood alerts, public service announcements, or local business promotions.



Urban Sensors

Placed discretely inside smart waste stations, urban intelligence sensor networks can be deployed exactly where the people are to capture data from footfall and noise, to environmental status and pollution levels.



Small Cell and Wireless Equipment

Leverage the Bigbelly platform as a multi-purpose infrastructure in dense urban areas. It can host small cell and other wireless equipment in an easy to access sidewalk location while being hidden in plain sight.



First Responder Networks

Consider the platform extended to be a cabinet-like hosting location for essential city safety networking equipment right on the street, such as separate first responder networks or emergency broadcast systems.

#1 World Leader in Smart Waste & Recycling Systems

Bigbelly Smart Solutions for Cities

Bigbelly is the #1 provider of smart waste & recycling solutions around the globe, deployed across Smart Cities, campuses, and organizations in all 50 United States and in over 50 countries worldwide.

The company was founded in 2003 with the goal of transforming one of the least efficient and resource-intensive industries: waste collection. Since then, the company has evolved to offer a unique and complete solution by leveraging renewable solar energy and information technology.

Today, Bigbelly is a multi-purpose platform for building smarter cities. Uniquely positioned as a public right-of-way platform, it delivers Smart City solutions and hosts communications infrastructure. It enables communities to beautify public spaces, increase productivity, and improve quality of life.

1702



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303 E. State Street
Traverse City, MI 49684
katy@downtowntc.com
231-922-2050

Memorandum

To: Downtown Development Authority Board of Directors

From: Harry Burkholder, DDA COO & Katy McCain, Comm. Dev. Director
Steve Nance

For Meeting Date: September 17, 2021

Memo Date: September 9, 2021

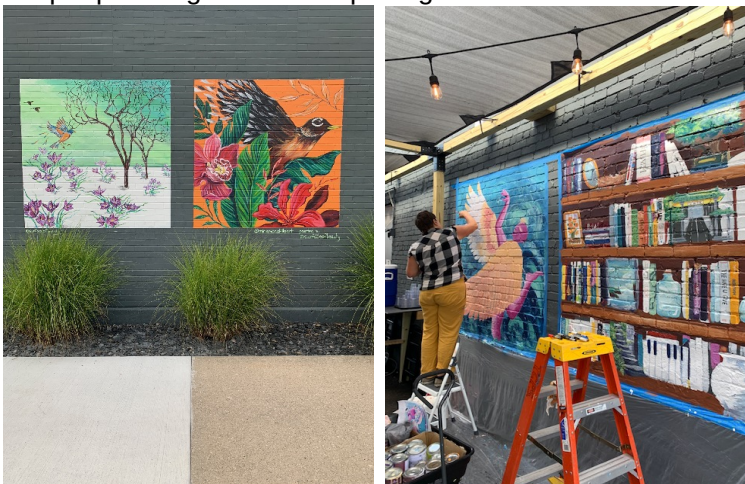
SUBJECT: Arts Commission Update

10 Street Trailhead – Arts on the Tart

The selected artists Sous la Ciel are underway with fabrication and painting for the Tenth Street Trailhead art piece. Due to some labor delays, we hope to have this art piece installed by the end of October. Their pieces include a series of painted panels and a picnic bench, containing accurate murals of local flora and fauna from throughout the Grand Traverse Region and Boardman Watershed.

Mural Project Update

The paintings are completed and we are working on getting the proper information for the plaques to go with each pairing. Look for details on a ribbon cutting later this month.



Rotating Exhibit

The four sculptures by Robert Sestok that had temporarily been placed along the Boardman Lake Trail (part of a collaboration with TART for their *Art of the TART* Initiative) will be removed at the beginning of November. The Arts Commission is discussing entering into an 18 month contract with local artist David Petrakovitz to showcase four of his pieces in this location.

Strategic Plan RFP

Last month, we issued a formal RFP to hire a consultant to assist in the development of a new strategic plan for the Arts Commission. We received three proposals, with cost estimates that were significantly larger than we anticipated and budgeted. We are working with the Arts Commission to refine and reissue the RFP.



Memorandum

To: DDA Board of Directors
CC: Jean Derenzy, DDA CEO
From: Nicole VanNess, Transportation Mobility Director
Date: September 9, 2021
Re: Staff Report: Parking Services – September 2021

Permit Waitlist

We have continued to monitor utilization in the surface lots and release permits from the waitlist. Effective Wednesday, August 25th the waitlist was terminated. The current oversell ratio is 52%, and there is still available occupancy throughout the day. Anyone who purchases a surface lot will have immediate access to parking.

When the surface lots reach capacity, the ground level of the Old Town Parking Garage has been designated as the overflow location. Once the overflow location is activated, the surface permit waitlist will be reinstated. To ensure parkers retain access to their surface permits, they must renew their permits on or before expiration to remain permit eligible. A courtesy reminder permit renewal notification is sent via email two weeks prior to expiration. Failure to renew will result in the parker forfeiting their right to renew their permit.

August Parking Revenue

Meter revenue increases this month may be attributed to increased utilization, but is likely the result of the increased fees while the admission fees at both garages are likely a combination of increased fees and additional transient availability caused by a decline in permit usage.

Meter Revenues

	2021	2020
Total Revenue	19%	-30%
Coin	13%	-34%
Pay-by-cell	41%	-14%

Hardy Admissions

	2021	2020
Total Revenue	-14%	-49%

Old Town Admissions

	2021	2020
Total Revenue	7%	-21%

Upcoming Projects

In the coming weeks, we will issue RFPs or obtain quotes for the following projects:

- Parking Garage Occupancy Signage Proposals Due October 5, 2021
- Re-issue Window Washing – 3-year RFP due to no response
- Reset Pavers at Old Town



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Memorandum

To: Downtown Development Authority Board of Directors

From: Katy McCain, DDA Director of Community Development

Date: September 10, 2021

Re: Community Development & Events Update

Coffee With the CEO

The DDA is continuing with our “coffee hours” with Jean Derenzy series, to be held at a different downtown location each month. We held our first session in June and had great feedback. After taking the busy summer months off, it will return for the remainder of 2021. Merchants and community members can sit down and ask questions about downtown projects, events, or issues affecting their business. The September session of “Coffee with the CEO” will be held on Wednesday, September 15 at Morsels.

Annual Downtown Dinner

Please save the date... The annual DTCA will be returning in 2021 after a year-long hiatus from COVID. This year's dinner will be held at City Opera House on Thursday, October 28. Nomination details for the Lyle DeYoung Award will be out shortly. Other popular aspects of the dinner will be returning, including the gift basket raffle and Golden Shovel Award.

Halloween Walk

The Halloween Walk will take place on Saturday, October 30, from 10-11:30am. This event typically runs itself, though we are looking for some volunteers to assist in busy crosswalks to insure safety for those participating. Use this [link](#) to sign up, if you are interested in volunteering.

Shop Your Community Day

Shop Your Community Day is Saturday, November 13. Applications have gone out to both the merchants and non-profit organizations for participation. We will be limiting it to 30 charities this year. 15% of all sales from participating merchants will go directly to the shopper's non-profit of choice.

Light Parade/Tree Lighting/Santa's Arrival

The light parade and tree lighting will be held on Saturday, November 20. We are in the process of working out the details for the evening. The parade will end with Santa's arrival. We have determined that Santa will not be in his house this year for children to visit, due to safety concerns of youth not being eligible for vaccination. We are looking into having Santa drive through town on the antique fire engine multiple evenings in December, so that children will still be able to see him.

Social Media Update

The DDA Facebook page had a net gain of 6 page likes. Its most popular posts were the Lower Boardman engagement session, feature on Zest restaurant, and the "Reimagine Eighth Street" video update. The DTCA Facebook page gained 125 net followers in August. The most popular posts were the opening of Bahia, the 9&10 News Red Hot Best, and the feature on Zest. The DTCA Instagram account had a net growth of 306 new followers. The most popular posts were the Zest feature, the Downtown Art Fair, and the opening of Bahia. Both accounts continue to trend upward gaining new followers with an increase in engagement, especially on Instagram.

Last Slice of Summer

The last Slice of Summer event was held on Friday, August 27. There was good turnout, despite uncooperative weather and sporadic rain. The participating Old Town businesses were very pleased with the event and are looking to do something similar next year.

Downtown Art Fair Series

The Downtown Art Fair took place in the Open Space on Saturday, August 21. It was well attended and we have received good feedback from both vendors and those who attended. An extensive questionnaire went out to vendors of all three art fairs in the summer series. We will take this data and evaluate best practices for next year's shows, including possible location changes etc.



**Minutes of the
Arts Commission for the City of Traverse City
Regular Meeting
Wednesday, August 18, 2021**

A regular meeting of the Arts Commission of the City of Traverse City was called to order at the Commission Chambers, Governmental Center, 400 Boardman Avenue, Traverse City, Michigan, at 3:30 p.m.

The following Commissioners were in attendance: Commissioner Ashlea Walter, Commissioner Chelsie Niemi, Commissioner Roger Amundsen, Board Member Mi Stanley, and Board Member Caitlin Early

The following Commissioners were absent: Board Member Steve Nance and Board Member Joshua Hoisington

Chairperson Amundsen presided at the meeting.

(a) **CALL TO ORDER**

Meeting called to order at 3:35

(b) **CONSENT CALENDAR**

- (1) Consideration of approving the minutes from the July 21, 2021 Regular Meeting (approval recommended) Burkholder. McCain)

Approved with change that Niemi was not present in July.

- (2) Consideration of approving of July 2021 Financials (approval recommended) (Burkholder, McCain)

- (3) Motion to approve the consent calendar with the revision that Niemi was not present for the July meeting.

Moved by Chelsie Niemi, Seconded by Ashlea Walter

Yes: Ashlea Walter, Chelsie Niemi, Roger Amundsen, Mi Stanley, and Caitlin Early

Absent: Steve Nance and Joshua Hoisington

CARRIED. 5-0-2 on a recorded vote

(c) **OLD BUSINESS**

(1) Art on the TART - 10th Street Trailhead

- Commissioner Walter asks about the QR code
 - Chairperson Amundsen says we should lean on a local entity with info on nature to link to
 - Commissioner Early mentions that there is a QR code requirement by the DNR Trust Fund for TART projects, so TART would be happy to collaborate on this portion
 - Staffer McCain suggests linking to the pdf that the artists used for considering the flora and fauna
- Upon suggestion by Commissioner Walter, group determines that a local environmental entity should also double check the list of species represented in the project to make sure they are native
 - McCain to contact Conservation District and the GTB

(2) Mural Pilot Project

- Signage is discussed
 - Staff to check with Image 360 to see if an adhesive sign could be used vs drilling
 - It is also mentioned that grant funders need to be included on signs
 - Staff person Burkholder states that the language will also be approved by the artists
- Commissioner Walter asks how the commission would like to move forward on adding more murals
 - Commissioner Niemi states that if we know the funding is there, she would be happy to propose moving forward vs starting brand new projects

(3) Strategic Plan

- Commissioner Walter asks why non of the local organizations that were approached applied
 - Staff person Burkholder mentions that most of them did not have capacity at that time but its possible they will if its reopened
- Staff person McCain mentions we have gotten other interest post-closure so there should not be a problem when its reopened
- Group determines that it will be reopened with some revisions (esp in the art inventory piece) and with a budget added
- The three who submitted the first time will be notified and encouraged to revise and resubmit

(d) NEW BUSINESS

(1) City of Traverse City Banner Program

- West Front banners are now illegible
- Staff will do more digging on funding available and if West Front is an option to replace

(e) **PUBLIC COMMENT**

(1) General

(2) Commissioners

- Recent vandalism on tunnel murals mentioned
 - Staff person McCain mentions that the police and city were notified and are looking into getting them fixed
- Sestok set to be removed in October
 - Group agrees to reach out to Petrakovitz about temporarily placing his pieces
 - Pads need to be measured and dimensions sent to Petrakovitz
 - Mid September meeting will be had with temporary exhibit committee
- Commissioner Walter asks when 16th Street Trailhead project will be discussed
 - Commission staff will meet with TART and Commissioner Early prior to the September meeting

(f) **ADJOURNMENT**

(1) Motion to adjourn at 4:38

Moved by Caitlin Early, Seconded by Chelsie Niemi

Yes: Ashlea Walter, Chelsie Niemi, Roger Amundsen, Mi Stanley, and Caitlin Early

Absent: Steve Nance and Joshua Hoisington

CARRIED. 5-0-2 on a recorded vote

Roger Amundsen, Chairperson