ACCESS FOR ALL:
Maintaining Our Sidewalk Transportation Corridors in Winter

Research and Evaluation Summary
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Introduction and Summary

SnowBuddy is a 501c3 nonprofit, providing free sidewalk snow removal service for the Ann Arbor Water Hill Neighborhood.

SnowBuddy's mission is to advocate for citywide winter sidewalk maintenance to permit safe sidewalk transportation for our young, elderly, and physically challenged neighbors, knowing that others will benefit as well.

In 2016 and 2017, SnowBuddy received Innovation Grants from the Ann Arbor Area Community Foundation to explore citywide solutions to sidewalk snow removal.

These grants supported the professionalization of SnowBuddy's operations in the Water Hill Neighborhood and an evaluation of city's current winter sidewalk maintenance in an effort to identify potentially better approaches.

Key findings from the evaluation include:

- The City has been discussing how to improve walkability for at least a decade.
- There is a consensus that walkability can and should be improved.
- Keeping sidewalks safe in the winter is recognized as a high priority.
- There are significant portions of sidewalks that are impassable during winter.
- There is a broad consensus that keeping sidewalks cleared in winter will benefit everyone.
- There is political leadership interested in finding a viable citywide solution.
- SnowBuddy's model is not a viable citywide solution.
- City administrators are supportive if they do not have to add to their operations.

Given these findings, SnowBuddy believes it is time for the City of Ann Arbor to move from the question of "Should the city be responsible for sidewalk snow removal?" to "How should the city ensure quality sidewalk winter maintenance for all?"

Evaluation

This evaluation served several purposes, all with the goal of recommending a viable path forward towards quality wintertime sidewalk maintenance for all in the City of Ann Arbor.

The Research Questions Were:

- What are the City's current policies on wintertime sidewalk maintenance?
- What are SnowBuddy's operational metrics, such as:
  - Average cost per snow event?
  - Average amount of labor hours per snow event?
  - Average time to clear sidewalks per snow event?
- What are the advantages and challenges to replicating SnowBuddy's model?
- What are other potential approaches to quality citywide sidewalk snow removal?
- What are the conditions of other neighborhood sidewalks after snow events?
- What do Ann Arbor residents want?
- What is the City able/willing to do?

Evaluation Stages

1

Review the City's history of discussing and addressing pedestrian safety issue to establish where our community stands on the issue.

2

Compile and analyze four years of SnowBuddy's operational statistics to get a clear sense of the effort it takes to clear a neighborhood's sidewalks of snow and ice, and to assess SnowBuddy's strengthens and weaknesses.

3

Learn about how other cities similar to Ann Arbor successfully clear their sidewalks of snow. Visit the Department of Public works in Burlington, VT, which has operated a city-funded sidewalk snow removal service for many decades.

Crossings cleared of snow berms created by street plowing.

4

Gauge the effectiveness of the City of Ann Arbor's current winter sidewalk maintenance approach. Observe four comparable neighborhoods and document the conditions of their sidewalks 24 hours after a snow event and then three days after a snow event.

5

Conduct an online survey of open-ended questions gathered qualitative data to measure City residents' attitudes towards sidewalk snow removal.

6

Meet with city administrators, the Commission on Disability Issues, and AATA to explore ideas for improving wintertime sidewalk maintenance and to build support for working together to bring those ideas into existence.

Each part of the evaluation is described in more detail in the following sections.

HISTORY OF ANN ARBOR'S SIDEWALK SAFETY AND ACCESSIBILITY

Documents Reviewed Include:

- Ann Arbor Transportation Master Plan update 2009
- City Council's Complete Streets Resolution March 2011
- Ann Arbor's Non-motorized Transportation Plan update 2013
- The Pedestrian Task Force report September 2015
- The Federal Highway Administration manual "How to Develop a Pedestrian Safety Action Plan."

Improving Ann Arbor's walkability has been in our public discourse for over a decade now. The issue began to get attention when the City of Ann Arbor used a "Complete Streets" evaluation framework for its 2007 Non-motorized Transportation Plan and its 2009 City Transportation Plan update. Complete Streets are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. In March 2011, the City of Ann Arbor further strengthened its commitment to pedestrians when the City Council adopted the "Resolution Proclaiming the City of Ann Arbor's Commitment to Complete Streets" (R-11-088), in which it recognized that a significant percentage of Ann Arbor residents walk, bike or use public transit as their primary means of transportation and committed to including non-motorized transportation in its street planning.

In 2013, the city updated its Non-motorized Transportation Plan, in which improving pedestrian access and use of sidewalks was identified as a critical need for the city and led to the Ann Arbor City Council establishing a Pedestrian Safety and Access Task Force (Task Force). This Task Force was charged with exploring strategies to improve pedestrian safety and access in the City and make recommendations to be considered in a Pedestrian Safety Action Plan. Two years later, in September 2015, they shared their findings.

The Task Force concluded that, "the walking environment in Ann Arbor can and should be improved, making the City safer, more accessible, and more friendly for people of all ages and abilities who use our public roadways, sidewalks, and pathways." Their conclusion was founded in their belief that, "a safer and more accessible walking environment enhances overall community attractiveness as a place to visit, live, and work, all of which contribute to economic prosperity; improves local envi-

ronmental quality; and positively impacts citizens' personal health by broadening the opportunities to use non-motorized transportation." The Task Force listed recommendations for how the City could improve its walkability, which included several recommendations marked as high priority regarding the maintenance of safe sidewalks during the winter.

The Task Force concluded that the City should embrace the challenge of making its transportation system fully accessible to persons of all abilities and should continue to engage the Commission on Disability Issues on the design of specific pedestrian improvements, ordinances and expand the use of best practices that promote safe, comfortable and convenient travel for individuals who rely on pedestrian networks for their daily transportation needs. More specifically, the Task Force encouraged the City to assess the financial, operational feasibility and level of community support of the City undertaking snow and ice removal on the City's public sidewalk system.

The Task Force recommended that the City improve its enforcement of this ordinance to improve wintertime sidewalk access. Three years later, the problem persists.

City Ordinance No-Ord-13-15 requires property owners to clear the portion of public sidewalk adjacent to their property of ice and snow.

Sidewalks on entire block remained uncleared.

SNOWBUDDY'S OPERATIONS

One goal of the evaluation was to better understand what SnowBuddy does and to assess its strengths and weaknesses as a model for a city-wide solution for sidewalk snow removal. Four years (2014-2018) of quantitative data were compiled to produce a representative picture of a typical snow removal season.

SnowBuddy works an average of 14 snow events a season, 7 of which are multiple day events, for an average total of 23 days of active snow and ice removal. The snow seasons spans from mid-November to mid-March. Ann Arbor receives an average of 40 inches of snow a year and its average largest snow fall per season is 11 inches. February is typically the snowiest month.

SnowBuddy has an all-volunteer staff. There are an average of 15 drivers and maintenance staff each year. Drivers work an average total of 92 shifts a year or 6 shifts each. The average length of a shift is 3 hours for a total of 265 hours a year, and individual drivers work an average of 18 hours a season, but the range is 3 to 43 hours. Each snow event requires an average of 16 hours of labor.

Data Collected and Analyzed Include:

- Four snow seasons of SnowBuddy operations data, including number of snow events and amount of snow fall
- Total hours worked and number of shifts per event
- Revenue and expenses

There is a volunteer maintenance crew who maintains and repairs the tractors. The evaluation did not have access to data on the hours spent maintaining and repairing equipment, but estimates that it is an additional few hundred hours. The maintenance crew does everything from routinely changing the oil, to fixing or replacing parts (often under pressure to get the tractor back out clearing snow), to changing tires or cleaning up broken cab windows out on the routes (often in cold and dark conditions).

A volunteer board of directors includes five diverse professionals who bring experience ranging from

SnowBuddy is Fiscally Sound

nonprofit and business management, to commercial snow removal, environmental consultation, legal advocacy, and government service. The board meets year-round to both manage the operation and to strategize their advocacy for citywide quality winter sidewalk maintenance.

SnowBuddy also relies on volunteered resources. There are five households scattered throughout the neighborhood who donate the use of their garage space to store and work on equipment, and to serve as refueling stations for gas and ice melt.

The organization's fiscal year is July 1 – June 30; the evaluator analyzed the first three complete fiscal years (2014-2017). The organization is funded primarily through volunteer contributions from neighborhood residents that are solicited by an annual appeal letter. Its revenue surpasses its expenses every year. The average total annual expenses are $30,403 and the average revenue is $35,417. The biggest expense is equipment; SnowBuddy spends $13,654 (45%) of its budget on payments for the two tractors. Another $7832 (26%) goes towards maintenance and repairs. Ice melt costs $3419 (11%) a year, operations costs $3,325 (11%), and fundraising costs $2173 (7%) a year. Generally, the average total cost per snow event is $2,332.

SITE VISITS

Data included discussions and site visits with:

- Burlington, VT Department of Public Works
- Ann Arbor, MI Department of Public Works

The evaluation identified Burlington, VT as a City that was responsible for removing ice and snow from its sidewalks and had similar characteristics to Ann Arbor. Burlington has a university campus within its city limits, a thriving downtown area, a public transit system, a diverse population, and similar winter weather. Burlington is smaller with a population of 42,000 compared to Ann Arbor's 118,000 and covers 15.48 square miles versus Ann Arbor's 28.69 square miles. The evaluator reached out and began a conversation with Rob Green, assistant director of their Department of Public Works Traffic Unit. On February 1, 2018, the evaluator traveled to Burlington with SnowBuddy's President, Lisa Brush, to learn more about their operations.

Burlington, Vermont's fleet of 14 tractors

The City of Burlington has been responsible for sidewalk snow removal for many decades. (No one was quite sure when they started, but they do know they began with a horse-drawn sidewalk-sized plow). Burlington's Department of Public Works (DPW) sidewalk snow removal operations are staffed with city employees using city equipment and facilities. They are centrally located about 4 blocks away from downtown.

About ten years ago, the department's new director, believing that walkers are as important as drivers, raised the bar for the city's sidewalk snow removal services. The city increased the size of their fleet of tractors and set a standard of clearing sidewalks to the concrete within 24 hours after a snowfall. The DPW now regularly meets this standard and city residents are grateful they can rely on the city for this service.

Burlington's operations include 12 tractors, 9 sidewalk routes totaling 127 miles, and about 8 regular employees to

clear those routes. Their operations are similar to SnowBuddy's in that every fall their crews travel the routes to clear obstructions (tree branches, landscaping stones, etc.) from them, they prep their tractors for service and then clear sidewalks every time there is an inch or more of snow. During the off seasons, the tractors are maintained and repaired, then stored. They also share the same approach to the application ice melt – they use as little as they can, the teams on the ground make the decision on how to use ice melt depending on the conditions they are facing, and they try to choose the most environmentally friendly options to protect pets and plants. They also field an average of one complaint per snow event, usually a resident upset about disturbed landscaping. The City of Burlington has an ordinance that requires property owners to keep 12 inches on both sides of the sidewalk cleared of obstructions, and often the complainant is simply in violation of that ordinance.

Their sidewalks services are fully integrated with their street plowing operation. They stated that they spend twice as much time on sidewalks, taking care to clear them down to the concrete. The sidewalk tractors drivers know where the street plows are and ensure that all of the crossing are cleared of the snow berms they leave behind.

The City allocates $450,000 in its annual budget for sidewalk snow removal, plus another $120,000 most years to add a new tractor and retire an old one in an effort to keep their fleet refreshed. The Burlington DPW stated that there is wide support for the city to continue this service and that no one complains about the cost. In fact, a recent mayor attempted to reduce services and he was voted out of office the next election partially because of it.

The evaluator also spoke and met with Molly Maciejewski, manager of Ann Arbor's Department of Public works. The City of Ann Arbor DPW currently clears about 54 of its 427 miles of sidewalk and includes areas that are adjacent to City property, parks, and crosswalk islands.

Mrs. Maciejewki said that she estimated the costs for the City of Ann Arbor to provide citywide sidewalk snow removal for City Council last year and that the total was over $2 million dollars to get it started. When asked what she thought of the idea if funding was not a barrier, she identified two other challenges: 1) the City does not have enough work to keep busy the rest of the year the addition city employees needed for such an operation and 2) seasonal workers are hard to come by. Another noted challenge was the fact that the Ann Arbor DPW facility is not centrally located and it would be difficult to manage a fleet for the whole city out of their Wheeler Center on Stone School road.

Ms. Maciejewski believes that the economical approach for the City to take responsibility for winter sidewalk maintenance is for it to solicit bids through a competitive RFP process to procure the services from one or more local contractors who already provide sidewalk snow removal services.

Observations of Ann Arbor Neighborhoods Includes:

- Observations of the Abbot (Peace Neighbor hood Center), Haisley, Old West Side, and North Burns Park neighborhoods. (See appen dix for detailed map.)
- Observations made
  - 24 hours after snow ended on December 9th
  - 3 days after January 9th snow event

The conditions of many of the sidewalks during both observation periods were, at best, in violation of the City ordinance and at worst, impassable.

Problems observed in include:

- Some neighborhood streets had 50% -75% of their sidewalks not shoveled, even three days after the snow stopped.
- Vacant lots and some city park sidewalks were not shoveled.
- Patches of sidewalk on main corridors like Packard and Miller were not cleared.
- Sidewalks where many students live were often impassable.
- Some sidewalks that were cleared still had snow berms at crossing.
- Some sidewalks suffered from overuse of ice melt.

Sidewalks adjacent to city parks remained uncleared.

Photo taken 3 days after the snow stopped.

Cleared sidewalks have berms at crossing.

Overuse of ice melt products was a common sight.

The evaluation included observing neighborhoods comparable to Water Hill in terms of area and residential mix. The evaluator drove and walked around each neighborhood twice.

An online qualitative data survey asked the following questions:

- Has learning about SnowBuddy's mission changed the way you think about sidwalk snow removal? How?
- Who in your life would directly benefit from having all of the sidewalks cleared of snow within 24 hours of a snow event? How would they benefit?
- What would you be willing to pay, either through a voluntary contribution to tax-exempt organization or through an increase in annual property taxes, for citywide sidewalk snow removal?
- Do you live in the Water Hill neighborhood?

Survey Data

In March 2018, using the web-based application Survey Monkey, the evaluator designed a survey to collect qualitative data on City of Ann Arbor residents' thoughts on sidewalk snow removal. The survey consisted of three open-ended questions designed to elicit honest thoughts, but not scientific conclusions. SnowBuddy posted the survey on the social media site NextDoor and received 162 responses. The evaluator tallied common themes and collected quotes that captured those themes.

The First Question

"Has learning about SnowBuddy's mission changed the way you think about sidewalk snow removal? How?"

Examples of typical responses include:

- Yes. I agree wholeheartedly that sidewalks are as important as the rest of the street and that our City taxes should be used to pay for the entire street to be cleared, including the sidewalk.
- All citizens deserve to have clear sidewalks.
- Yes, I recognize that there are many people who depend on safe surfaces.
- Yes, it has made me think this could - and should - happen citywide.
- Yes. Makes it seems easier and less antagonistic among neighbors.
- Yes - it helps me see the sidewalks more on par with roads in the winter months and appreciate them as a transportation option for the community.
- Yes. I wonder why drivers in a so-called green and pedestrian-friendly town with high taxes

enjoy snow-cleared streets, while pedestrians must suffer uncleared and dangerous walkways. Pushing the duty to homeowners is a patent failure.

- Yes. Of course a good deal of the success is due to people being willing to volunteer. That would not necessarily be the case everywhere.
- I think defining sidewalks as a part of the transportation infrastructure is brilliant.
- I see how absolutely essential sidewalk snow removal is. Safe to walk on the sidewalks by foot and by wheelchair. Reduction of ice. I see what a community can do and I love it, but I also think this should be a city service.
- One issue I can foresee is sustaining the service with volunteers.
- Yes. That it's not just convenience, but a matter of critical access for some people.
- I can see it works! There are too many neighbors who can't or won't clean their sidewalks. We need a better system.
- Absolutely. I never thought much about this before, but I live in Water Hill so I know the difference now between our neighborhood and other parts of Ann Arbor with their iffy or hazardous winter sidewalks. SnowBuddy now seems as essential as street plowing in this city that thinks it's walkable.

The Second Question

"Who in your life would directly benefit from having all of the sidewalks cleared of snow within 24 hours of a snow event? How would they benefit?"

This question revealed just how universal the benefits would be if all city sidewalks were reliably cleared. The tallies of responses are presented in Table 1 below. (Counts of responses are not accumulative; respondents could have provided more than one answer or nothing at all.)

Who Would Benefit	Response
I/We Would	77
Everyone	47
Children/School Walkers	29
Dog	25
Seniors	23
Disabled/Health Problems	13
Parents	9
Mail Carriers	3

Examples of typical responses include:

- Everyone I know. Being able to walk the sidewalks all winter long is wonderful for mental and physical health.
- Me, myself and I. benefit by easier and safer walking. Also save me from getting angry at those who do not shovel.
- We all do as a community. It's appalling to me that the city does not keep up with plowing the streets promptly, yet citizens are expected to do so.
- We are 70 and this has helped us SO much. Knees and backs are saved from this very strenuous work.

Of course, there were a few detractors. For example, one resident responded, "I enjoy shoveling, so I would not benefit. I imagine I would become annoyed waiting for the Snowbuddy to arrive." But, the data clearly revealed a consensus that it would be good for everyone.

The Third Question

"What would you be willing to pay, either through a voluntary contribution to tax-exempt organization or through an increase in annual property taxes, for citywide sidewalk snow removal?"

Yes, will financially support	8	No, do not want to fund	7
New taxes are fine/whatever it takees	47	No new taxes	14
Responsibility of the city	6	Responsibility of the home owner	6
Voluntary payments/will pay if not taxes	16	Would volunteer services, cant' pay	2
Should do with taxes already collected	4		
Total in favor of Funding Services	**47**	**Total Against Funding Services**	29

This question revealed a range of attitudes, as tallied in the table above. However, the large majority of respondents would be willing to pay for sidewalk snow removal.

Of note, only 1 respondent said that it should only be done for those who cannot clear the sidewalks themselves. And, 9 respondents noted their distrust of the City to do a quality job, but most were silent on their preference for a private versus public solution.

I would benefit. My neighbors, young and old. I can't think of anyone who wouldn't.

Many respondents provided a dollar amount that they think would be fair price for winter sidewalk maintenance. The table below details those responses.

<$50	10
$100	50
$100 - $200	23
$200-$300	9
$400	1

The Fourth Question

40% of respondents lived in Water Hill neighborhood, 60% did not.

Meetings with:

- Ann Arbor City Supervisor Howard Lazarus and his team
- Commission on Disability Issues
- Ann Arbor Area Transportation Authority (AATA)

Conversations with City of Ann Arbor administrators

City administrators welcomed the opportunity to discuss with SnowBuddy leadership about how to improve accessibility to sidewalks during the winter. SnowBuddy met with members of the Commission on Disability Issues and they joined our talks with the City. The AATA endorsed our mutual interests in keeping sidewalks cleared. As they put it, bus riders are pedestrians twice a ride.

These conversations have mostly revolved around how the City could support SnowBuddy expanding its service area through a pilot project. They made clear that the funding sources available are for supporting projects that benefit the disabled and elderly and that serving these populations is their priority. The City also stressed that they are not interested in owning and managing additional equipment. These conversations continued through the winter and evolved to reflect the lessons that SnowBuddy was learning from this evaluation and culminated with SnowBuddy recently submitting a grant proposal to develop a roadmap forward for the City. See Next Steps section for details about that proposal.

Conclusions and Recommendations

Several important findings emerged from this evaluation that has led to a change in how SnowBuddy envisions moving forward towards its ultimate goal of ensuring equal and safe access to the City of Ann Arbor's sidewalks during winter.

Key findings include:

- The City has been actively discussing how to improve the pedestrian experience at least since 2007. It is clearly an issue many people care about.
- There is a consensus that walkability can and should be improved, even after years of discussing how and implementing of some improvements.
- Keeping sidewalks safe in the winter is recognized as a high priority.
- Significant portions of sidewalks are impassable long after a snow event and the enforcement of the City's ordinance has been ineffective at ensuring accessible sidewalk transportation.
- There is widespread agreement that keeping sidewalks cleared of snow and ice will benefit everyone and that it should be done better.
- SnowBuddy's model would be difficult, if not impossible, to replicate in a fashion that would provide a citywide approach. Few neighborhoods would have the requisite combination of resources (people, money, facilities, interest).
- The volunteer model is not a long-term solution. Volunteers should not be relied upon to drive and fix heavy equipment, to work all hours of the day, and to secure access to a vital transportation channel. For perspective, would we ask property owners or neighborhood collectives to clear the streets of snow in winter? Definitely not.

Given these findings, SnowBuddy believes it is time for the City of Ann Arbor to move from the question of "Should the city be responsible for sidewalk snow removal?" to "How?"

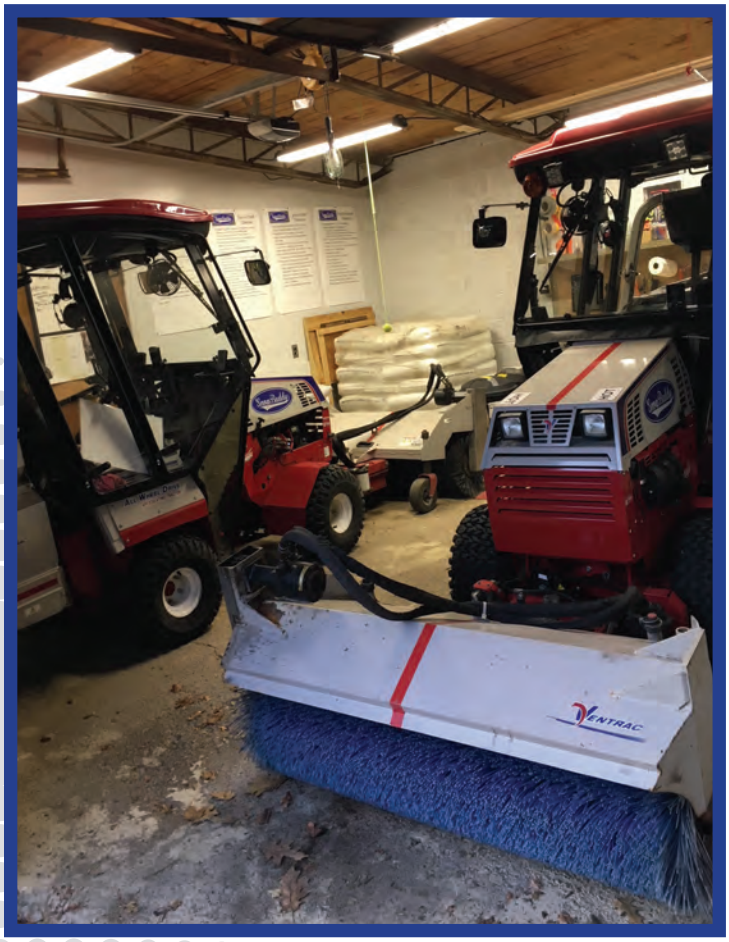
Next Steps

SnowBuddy is already actively working with relevant city departments and services to discover viable option for how the city can better ensure safe wintertime sidewalk traveling. SnowBuddy submitted a proposal to the City of Ann Arbor to create a roadmap for how the City can improve equal access to safe sidewalks by ensuring quality citywide snow removal services and ensure safe access to sidewalks in winter for everyone.

The roadmap could include:

- A vision for the near, intermediate, and distant future of Ann Arbor's winter sidewalk maintenance services that builds upon the work done by the Pedestrian Task Force.
- Suggested realistic approaches for implementing services, knowing that the City is not interested in owning or managing more equipment or adding more city employees to the Department of Public Works.
- An initial trial phase, during which the City contracts with private companies to clear high-traffic pedestrian corridors.
- A phased timeline of steps for implementing this vision that prioritizes service to targeted populations first (disabled low and moderate income seniors – candidates for aging in place, students, transit users, etc.).
- A clearly defined standard for what "clearing the sidewalk" means in practice i.e.: down to pavement.
- Targeted outcomes/metrics for each expansion phase.
- Cost estimates and funding strategies.

SnowBuddy is committed to working collaboratively with all key stake-holders to find a sustainable and long-term solution to ensuring equal access to sidewalks for all.



The SnowCave where the tractors are stored kept stored, maintained, and repaired.

SnowBuddy is a 501(c)(3) Michigan nonprofit. We see the sidewalk as an important transportation corridor. SnowBuddy's purpose is to provide free removal of snow from sidewalks in their entirety across multiple contiguous city blocks in the Waterhill neighborhood, Ann Arbor, Michigan, and to advocate for a similar approach to winter sidewalk maintenance city-wide, in order to efficiently provide safe travel for wintertime sidewalk users. Our goal is to permit safe sidewalk transportation for our young, elderly, and physically challenged neighbors, knowing that others with benefit as well.

www.snowbuddy.org