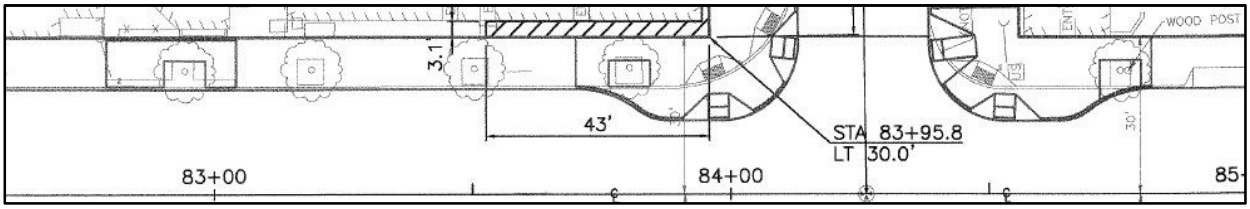
Seattle Department of Transportation

The Americans with Disabilities Act (ADA) Transition Plan for the Seattle Public Right-of-Way

Appendix 5.1b:
2015-2016 Curb Ramp Self-Evaluation



Summarized Self-Evaluation Results

The consultant surveyed a total of 28,284 curb ramps.

In addition to 23,678 ramps previously identified in the SDOT database, the consultant identified an additional 4,606 curb ramps that existed in the field but had not previously been included in the curb ramp database. Information on those additional ramps was collected and provided to SDOT. Photographs of each curb ramp surveyed were collected and submitted as associated attachments to the data. With the addition of previously undocumented ramps and the process of updating the database to incorporate the survey results, SDOT's asset management team made significant improvements to the SDOT database, which will aid future planning efforts.

With construction activities and other restorations continually occurring and impacting the public right-of-way, it should be noted that the results of the survey are to be considered a snapshot in time of the curb ramp conditions citywide.

Because of the numerous technical and legal variants that inform a determination of whether a ramp is technically compliant with the ADA, the consultant did not make compliance determinations. Rather, the consultant collected the required data points to permit future analysis of compliance, considering factors such as the time of construction, existing site constraints, street slopes and grades, the presence of underground areaways and utility vaults and other potential limitations which require ramp adherence to the ADA standards to the maximum extent feasible ("MEF").

Furthermore, many of the identified sidewalk segments that are missing curb ramps may be in areas where curb ramp installation is not warranted or appropriate due to traffic movement, roadway geometry, lack of sidewalks or crosswalks to connect to, and other considerations.
Below are some of the statistics evaluating features of a perpendicular (Type 422A) ramp.

Select Curb Ramp ADA Compliance Statistics	
Detectable Warning Present on Ramp	50%
Width of Ramp Greater than 36" in Width	92%
Running Slope of Ramp Less than 8.3%	44%
Cross Slope Less than 2%	52%
Landing Running Slope Less than 2%	50%
Landing Cross Slope Less than 2%	53%

Curb Ramp Scoring

After receiving the data from the consultant on over 28,000 curb ramps, SDOT further analyzed the ramp inventory using a numerical scoring system. The purpose of the analysis was to generate a big picture look at the overall state of the existing curb ramp inventory, as measured by selected key ramp characteristics.

The curb ramp scoring analysis focused on the two most prevalent types of curb ramps, the perpendicular curb ramp (Type 422A), and the parallel curb ramp (Type 422B). Other custom or modified curb ramp designs were not included as a part of the scoring analysis due to the complex and varying nature of their layouts. These types of ramps are rare and do not have a significant impact on this type of analysis.

The analysis identified key physical features and measurements and assigned each a numerical value between 0 to 2 points per ramp feature. A curb ramp feature with a value of 0 was determined to present no identified access barrier. Any point assigned to each ramp category assumes some level of a barrier, with 1 point indicating reduced usability, and 2 points indicating a significant identified barrier that may render the ramp not usable or passable for some pedestrians. The scoring values were based on a comparison of the existing curb ramp features against the current curb ramp standards for construction at the time of the analysis. SDOT is aware that the basis of the scoring assignments was somewhat subjective, but points were assigned using engineering judgment and an awareness of varying levels of pedestrian abilities. If necessary, additional data analyses can be performed with revised curb ramp feature considerations or point assignments based on pedestrian needs and abilities.

It should be noted that the provision of a tactile detectable warning surface at the base of the curb ramp was evaluated but not included as a part of this analysis due to the changes in regulatory requirements with respect to their use. However, because this data was collected, further analyses with respect to detectible warning surfaces can be conducted in the future as needed.

The key features selected and scored are detailed below. The range for a possible ramp score is between 0 and 30, with 0 suggesting no identified barriers and 30 suggesting some type of barrier in every category. The higher the number, the higher the potential that a ramp presents barriers that may reduce accessibility or usability for some pedestrians. Refer to the following pages in this document to review the scoring guide used for this analysis.

2015-2016 Curb Ramp Self-Evaluation Scoring Guide
(Perpendicular Ramp)

Potential Barrier	Characteristic	Barrier Score
Ramp Category *(serves 1 or 2 crossings)*	Single	0
	Shared	1
Surface *(construction material used to build ramp)*	Concrete	0
	Asphalt	1
	Brick	1
	Stone	1
	Other	1
Vertical Obstruction *(physical obstruction on ramp run that may restrict access)*	None	0
	Other	1 or 2
	Fire Hydrant	2
	Light Pole	2
	Pedestrian Signal Pole	2
	Street Sign Pole	2
	Utility Pole	2

Potential Barrier	Characteristic	Barrier Score
Surface Obstruction *(surface-mounted obstruction on ramp run that may reduce access)*	None	0
	Other	1 or 2
	Access Cover	2
	Broken Pavement	2
	Grade Break	2
	Grating	2
Condition *(general assessment of the overall physical ramp condition)*	Good	0
	Fair	1
	Poor	2
Ramp Width	48” or Greater	0
	36” to 48”	1
	Less than 36”	2
Ramp Running Slope	Less than or Equal to 8.3%	0
	8.3% to 12.0%	1
	Greater than 12.0”	2
Ramp Cross Slope	Less than or Equal to 2.0%	0
	2.0% to 4.0%	1
	Greater than 4.0%	2
Ramp Counter-Slope	Less than or Equal to 5.0%	0
	5.0% to 8.3%	1
	Greater than 8.3%	2
Landing Surface *(construction material used to build ramp landing)*	Concrete	0
	Asphalt	1
	Brick	1
	Stone	1
	No Landing	2
Landing Surface Obstruction *(surface-mounted obstruction on ramp landing that may reduce access)*	None	0
	Other	1 or 2
	Access Cover	2
	Broken Pavement	2
	Grade Break	2
	Grating	2
Landing Grade Break Connection	Flush	0
	Not Flush	1
Landing Grade Break Direction	Perpendicular	0
	Not Perpendicular	1
Landing Width	48” or Greater	0
	36” to 48”	1
	Less than 36”	2
Landing Depth	48” or Greater	0
	36” to 48”	1
	Less than 36”	2

Potential Barrier	Characteristic	Barrier Score
Landing Slope	Less than or Equal to 2.0%	0
	2.0% to 4.0%	1
	Greater than 4.0%	2
Landing Cross Slope	Less than or Equal to 2.0%	0
	2.0% to 4.0%	1
	Greater than 4.0%	2
	Total Possible Score	**30**

The results of the scoring analysis suggest that the majority of ramps comply with some of the most important features of an accessible curb ramp. Below are some of the statistics evaluating features of perpendicular (Type 422A) ramps. It is important to note that even ramps with higher scores may be built to MEF standards. This is especially true in areas with significant hills, such as downtown.

Select Curb Ramp Self-Evaluation Scoring Statistics	
% of Ramps Scoring 0	3.8%
% of Ramps Scoring 1-10	86.3%
% of Ramps Scoring 11-20	9.8%
% of Ramps Scoring 21+	0.1%
Ramp with the Highest Scoring	22

Seattle Department of Transportation

SDOT ADA Transition Plan Appendix 5.1b: 2015-2016 Curb Ramp Self-Evaluation Data Dictionary

Columns	Spreadsheet Name	Description	Values	Hansen Code Table Values	Value Type
Sidewalk UnitID	SIDEWALK UNITID	Sidewalk logical Identifier. SDOT internal use: do not change The unique identifier for a curb ramp is a) Sidewalk Unitid, and b) Curb Ramp Location	From Hansen; "NO SIDEWALK" if not associated with sidewalk		Text
Sidewalk Compkey	SIDEWALK COMPKEY	Sidewalk internal Identifier. SDOT internal use: do not change	From Hansen		Numeric
SegmentCompkey	SEGMENT COMPKEY	Block internal identifier. SDOT internal use: do not change	From Hansen		Numeric
Segment UnitID	SEGMENT UNITID	Street logical identifier. SDOT internal use: do not change	From Hansen		Text
Segment UnitID2	SEGMENT UNITID2	Block logical identifier. SDOT internal use: do not change	From Hansen		Text
Segment Description	SEGMENT DESCRIPTION	Segment description. Provides the on-street location of the block along which the curb ramp is installed. Do no change.	From Hansen; Follow the street naming convention if not associated with sidewalk		Text
Sidewalk Side of Street	SIDEWALK SIDE OF STREET	Side of street the sidewalk / curb ramp is located. Do not change.	From Hansen (E,W,N,S,NW,NE,SW,SE)	E,W,N,S,NW,NE,SW,SE	Text
Curb Ramp Location (H, M, L)	CURB RAMP LOCATION	High, Mid or Low Address end of block. For example, use the "L" Curb Ramp Location to indicate the curb ramp at the low address end of the block. Do not change. The unique identifier for a curb ramp is a) Sidewalk Unitid, and b) Curb Ramp Location	From Hansen (H,M,L)	H,M,L	Text
Ramp Category	RAMP CATEGORY	This field must be filled in if there is a ramp present.	From Hansen (SINGLE,SHARED,NORAMP)	SINGLE,SHARED,NORAMP	Text
Ramp Direction	DIRECTION	Describes the direction a pedestrian would be traveling if they left the sidewalk into the street	E,W,N,S,NW,NE,S,W,SE	E,W,N,S,NW,NE,SW,SE	Text
Ramp Style	RAMP STYLE	Identifies the styles of ramp on the sidewalk. Values are Type_A, Type_B and Modified.	From Hansen (MODIFIED,TYPE422A,TYPE422B,BLENDTRANS)	MODIFIED,TYPE422A,TYPE422B,BLENDTRANS	Text
Detectable Warning?	DETECTABLE WARN	Distinguishes if the ramp has detectable warnings	YES,NO	YES,NO	Text
Det. Warn. Color	DET_WARN_COL	If a detectable warning exists, what is the color	NONE,WHT,YLW,FL-YLW,AMBER,BLK,BLU,BRN,FL-PINK,GLD,GRN,GRY,ORG,PURPLE,RED,SLV,VLT	BLK,FL-YLW,GRY,NONE,WHT,YLW,RED	Text
MEF?		Maximum extent feasible?	YES,NO	YES,NO	Text

Seattle Department of Transportation

SDOT ADA Transition Plan Appendix 5.1b: 2015-2016 Curb Ramp Self-Evaluation Data Dictionary

Install Date		Date the curb ramp was installed	From SDOT		Date
Installer		Specifies who built the curb ramp	From SDOT	CIP-OTH,CIP-SDOT,NSF-CRF,PRIDEV,SDOTPED	Text
Condition Assessment Date	ASSESS_DATE	Date the condition of the ramp was assessed	Autogenerated		Date
Sidewalk Surface Type	SIDEWALK	Surface type of the sidewalk	From Hansen - ASPHALT CONC/FLEX BASE; STONE BLOCK, BRICK, PAVER ; GRAVEL; OTHER; PORTLAND CEMENT CONCRETE; PERVIOUS ASPHALT; PERVIOUS CONCRETE; BITUMINOUS SURFACE TREATMENT, UNIMPROVED, UNDETERMINED	AC, BR, GRAVEL, OTH, PCC, PV/OTHER, PVAS, PVCC, ST, UNIMPRV, UND	
Ramp Width		Width of the curb ramp (in inches)	0		Numeric
Ramp Condition		Condition rating for the ramp (Good, Fair, Poor)	GOOD, FAIR, POOR	GOOD, FAIR, POOR	Text
Additional Data to be Collected					
Ramp Location			INTERSECTION, MID-BLOCK, MEDIAN, SLIP LANE ISLAND		Text
Ramp Surface Type		Type of surface material of the ramp.	CONCRETE, BRICK, ASPHALT, STONE		Text
Ramp Obstruction		Permanent barriers located on the ramp.	NONE, UTILITY POLE, LIGHT POLE, STREET SIGN POLE, PED SIGNAL POLE, FIREHYDRANT, OTHER		Text
Ramp Surface Obstruction		Vertical disontinuities along the ramp.	GRATING, ACCESS COVER, GRADE BREAK, BROKEN PAVEMENT, OTHER		Text
Ramp Length		Length of curb ramp (inches)	0.0		Numeric
Upper Landing Grade Break - Connection		Break between the ramp and the top landing.	FLUSH, NOT FLUSH		Text
Upper Landing Grade Break - Direction		Grade break at the top of ramp relative to direction of ramp run.	PERPENDICULAR, NOT PERPENDICULAR		
Ramp Run Slope		Running slope of the curb ramp (percent)	0.0		Numeric
Ramp Cross Slope		Cross slope of the curb ramp (percent)	0.0		Numeric
Flare - Left	FLARE_L	Is there a left flare	YES,NO		Text
Flare - Right	FLARE_R	Is there a right flare	YES,NO		Text
Flare Slope L	FLARE_SLO_L	Slope of the left flare of curb ramp (percent)	0.0; NO FLARE		Text
Flare Slope R	FLARE_SLO_R	Slope of the right flare of curb ramp (percent)	0.0; NO FLARE		Text
Blended Transition Running Slope			0.0		Numeric
Upper Landing Surface - 1	TOP_LAN1_SUR	The surface material of the upper landing.	CONCRETE, BRICK, ASPHALT, STONE, NO LANDING		Text
Upper Landing Connect Sidewalk - 1	TOP_LAN1_SW	Upper landing connected to a sidewalk	YES, NO		Text

Seattle Department of Transportation

SDOT ADA Transition Plan Appendix 5.1b: 2015-2016 Curb Ramp Self-Evaluation Data Dictionary

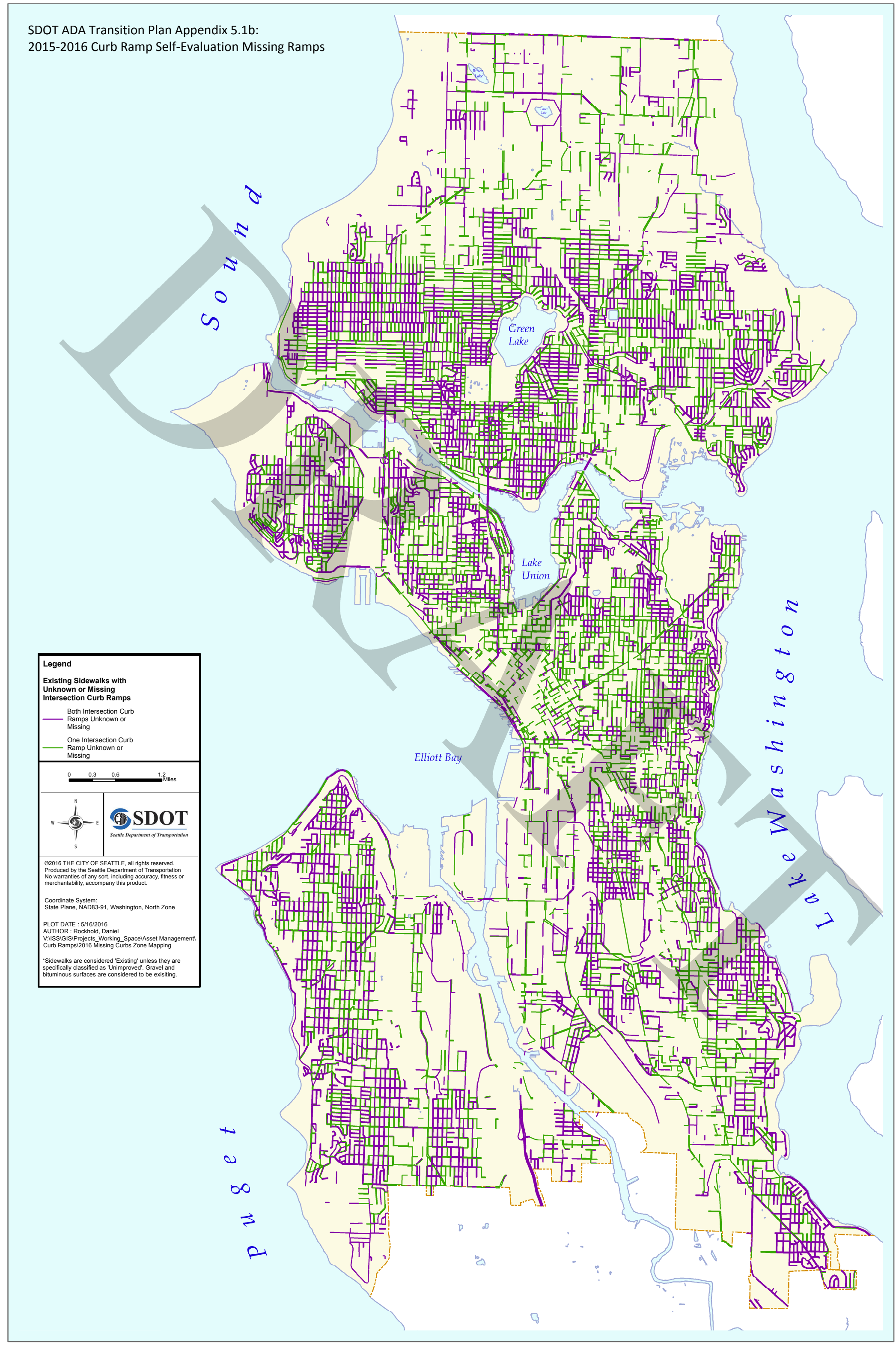
Upper Landing Surface Obstruction - 1	TOP_LAN1_SF_OBS	Surface obstruction of upper landing	GRATING, ACCESS COVER, GRADE BREAK, BROKEN PAVEMENT, OTHER		Text
Upper Landing Grade Break Connection - 1	TOP_LAN1_GB_CONN	Break between the ramp and the upper landing	FLUSH, NOT FLUSH		
Upper Landing Grade Break Direction - 1	TOP_LAN1_GB_DIR	Grade break at the top of ramp relative to direction of ramp run.	PERPENDICULAR, NOT PERPENDICULAR		
Upper Landing Width - 1	TOP_LAN1_WIDTH	Width of the upper landing of ramp (inches)	0		Numeric
Upper Landing Depth - 1	TOP_LAN1_DEPTH	Depth of the upper landing of ramp (inches)	0		Numeric
Upper Landing Run Slope - 1	TOP_LAN1_RUN_SLO	Running slope of the upper landing (percent)	0.0		Numeric
Upper Landing Cross Slope - 1	TOP_LAN1_X_SLO	Cross slope of the upper landing (percent)	0.0		Numeric
Upper Landing Surface - 2	TOP_LAN2_SUR	The surface material of the upper landing.	CONCRETE, BRICK, ASPHALT, STONE, NO LANDING		Text
Upper Landing Connect Sidewalk - 2	TOP_LAN2_SW	Upper landing connected to a sidewalk	YES, NO		Text
Upper Landing Surface Obstruction - 2	TOP_LAN2_SF_OBS	Surface obstruction of upper landing	GRATING, ACCESS COVER, GRADE BREAK, BROKEN PAVEMENT, OTHER		Text
Upper Landing Grade Break Connection - 2	TOP_LAN2_GB_CONN	Break between the ramp and the upper landing	FLUSH, NOT FLUSH		
Upper Landing Grade Break Direction - 2	TOP_LAN2_GB_DIR	Grade break at the top of ramp relative to direction of ramp run.	PERPENDICULAR, NOT PERPENDICULAR		
Upper Landing Width - 2	TOP_LAN2_WIDTH	Width of the upper landing of ramp (inches)	0		Numeric
Upper Landing Depth - 2	TOP_LAN2_DEPTH	Depth of the upper landing of ramp (inches)	0		Numeric
Upper Landing Run Slope - 2	TOP_LAN2_RUN_SLO	Running slope of the upper landing (percent)	0.0		Numeric
Upper Landing Cross Slope - 2	TOP_LAN2_X_SLO	Cross slope of the upper landing (percent)	0.0		Numeric
Lower Landing Surface	LOW_LAN_SUR	The surface material of the lower landing.	CONCRETE, BRICK, ASPHALT, STONE		
Lower Landing Surface Obstruction	LOW_LAN_SF_OBS	Surface obstruction of upper landing	GRATING, ACCESS COVER, GRADE BREAK, BROKEN PAVEMENT, OTHER		Text
Bottom Grade Break - Connection	LOW_LAN1_GB_CONN	Break between the ramp and the bottom landing	FLUSH, NOT FLUSH		Text
Bottom Grade Break - Direction	LOW_LAN1_GB_DIR	Grade break at the botom of ramp relative to direction of ramp run.	PERPENDICULAR, NOT PERPENDICULAR		Text
Lower Landing Extended ???	LOW_LAN_EXT_FOC				
Lower Landing Width	LOW_LAN_WIDTH	Width of the lower landing of ramp (inches)	0		Numeric
Lower Landing Depth	LOW_LAN_DEPTH	Measured wholly outside of the parallel vehicle lane	0		Numeric
Lower Landing Run Slope	LOW_LAN_RUN_SLO	Running slope of the lower landing (percent)	0.0		Numeric
Lower Landing Cross Slope	LOW_LAN_X_SLO	Cross slope of the lower landing (percent)	0.0		Numeric
Bottom Grade Break - Connection - 2	LOW_LAN2_GB_CONN	Break between the ramp and the bottom landing	FLUSH, NOT FLUSH		Text
Bottom Grade Break - Direction - 2	LOW_LAN2_GB_DIR	Grade break at the botom of ramp relative to direction of ramp run.	PERPENDICULAR, NOT PERPENDICULAR		Text
Detectable Warning Material	DET_WARN_MAT	Type of material of the detectable warning	PLASTIC, CONCRETE, STONE		Text

Seattle Department of Transportation

SDOT ADA Transition Plan Appendix 5.1b: 2015-2016 Curb Ramp Self-Evaluation Data Dictionary

Detectable Warning Mounting Type	DET_WARN_MOUNT	How is the detectable warning mounted to the ramp?	ADHESIVE, BUILT IN		Text
Detectable Warning Area Width	DET_WARN_WIDTH	Width of detectable warning relative to the width of the ramp.	FULL WIDTH, LESS THAN FULL WIDTH		Text
Detectable Warning Area Depth	DET_WARN_DEPTH	Depth of detectable warning (inches)	0		Numeric
Detectable Warning Condition	DET_WARN_COND	Condition rating for detectable warning	GOOD, FAIR, POOR		Text
Marked Crosswalk	MARK_XWALK	Presence of a marked crosswalk	YES, NO		Text
Ramp Within Crosswalk	CR_IN_XWALK	Does the entire width of base of ramp fall within marked crosswalk	YES, NO		Text
Companion Ramp	COMP_RAMP	Is there a corresponding curb ramp on the other side of the street?	YES, NO, NA		Text
Ramp Connection		Is the connection between the curb ramp and the companion ramp obstructed?	YES, NO		Text
MEF Condition	MEF_FACTOR	What is the possible MEF?	STREET SLOPE, RIGHT OF WAY, LIMITED CLEARANCE		Text
Removable Barriers	REM_BARRIERS	Presence of removable barriers	VENDOR BOX, MAILBOX, BENCH, OTHER		Text
Safety of Ramp		Potential safety hazards	BOTTOM LANDING IN TRAVEL LANE, PROTRUDING OBJECTS ON RAMP, PROTRUDING OBJECTS ABOVE RAMP, UNSTABLE RAMP SURFACE, UNSAFE CONDITIONS ADJACENT TO RAMP/LANDING		Text
Curb Height	CURB_HEIGHT	The height of the curb adjacent to the ramp (inches)	0.0		Numeric
Median Obstacle (?)	MEDIAN_OBS				
Median Access	MEDIAN_ACCESS				
Median ???	MEDIAN_TAC_SUR				
Image File 1	PHOTO1	Image file name			Text
Image File 2	PHOTO2	Image file name			Text

SDOT ADA Transition Plan Appendix 5.1b:
2015-2016 Curb Ramp Self-Evaluation Missing Ramps



Legend

Existing Sidewalks with Unknown or Missing Intersection Curb Ramps

- Both Intersection Curb Ramps Unknown or Missing
- One Intersection Curb Ramp Unknown or Missing

0 0.3 0.6 1.2 Miles

N W E S

SDOT
Seattle Department of Transportation

Coordinate System:
State Plane, NAD83-91, Washington, North Zone

PLOT DATE : 5/16/2016
AUTHOR : Rockhold, Daniel
V:\ISS\GIS\Projects_Working_Space\Asset Management\Curb Ramps\2016 Missing Curbs Zone Mapping

*Sidewalks are considered 'Existing' unless they are specifically classified as 'Unimproved'. Gravel and bituminous surfaces are considered to be exisiting.

Existing Sidewalks With Unknown Or Missing Intersection Curb Ramps