



# contents

Preface	<u>ix</u>
Acknowledgments	<u>xi</u>

## CHAPTER 1

Introduction	<u>1</u>
<b>1.1 A Big New Wave</b>	<b><u>1</u></b>
1.1.1 Automated Vehicles Are on the Way	<u>3</u>
<b>1.2 When Will We Stop Driving</b>	<b><u>9</u></b>
<b>1.3 Vehicles and Trips</b>	<b><u>17</u></b>
1.3.1 Types of Vehicles	<u>17</u>
1.3.2 A Typical Trip	<u>18</u>
<b>1.4 Book of Predictions</b>	<b><u>20</u></b>
References	<u>22</u>

## CHAPTER 2

People	<u>25</u>
<b>2.1 Older People</b>	<b><u>25</u></b>
<b>2.2 Disabled People</b>	<b><u>29</u></b>
2.2.1 Barriers Remain	<u>31</u>
2.2.2 Estimating the Benefit	<u>33</u>
<b>2.3 Young People</b>	<b><u>34</u></b>
2.3.1 Staying Alive	<u>34</u>
2.3.2 Why Automated Vehicles Will Be Safer	<u>37</u>
2.3.3 Freedom	<u>38</u>
<b>2.4 Commuters</b>	<b><u>40</u></b>
2.4.1 Reducing Congestion	<u>41</u>
2.4.2 Increasing Congestion	<u>45</u>
2.4.3 Higher Productivity	<u>46</u>

<b>2.5 Tourists</b>	<b><u>47</u></b>
2.5.1 Increasing Speed	<u>48</u>
2.5.2 Shifting Demands	<u>49</u>
<b>2.6 Rural Residents</b>	<b><u>50</u></b>
2.6.1 Population Density	<u>51</u>
<b>References</b>	<b><u>54</u></b>

## CHAPTER 3

<b>Land Use</b>	<b><u>57</u></b>
<b>3.1 Housing</b>	<b><u>57</u></b>
3.1.1 Decentralization	<u>58</u>
3.1.2 Increased Density	<u>59</u>
3.1.3 Lower Prices, Different Styles	<u>59</u>
<b>3.2 Parking</b>	<b><u>60</u></b>
3.2.1 Huge and Important	<u>60</u>
3.2.2 No Parking Needed Anymore	<u>61</u>
3.2.3 The Business of Parking	<u>63</u>
3.2.4 Space at the Curb	<u>63</u>
3.2.5 White Elephant Parking Garages	<u>64</u>
<b>3.3 Retail</b>	<b><u>65</u></b>
3.3.1 Cheaper without Parking	<u>65</u>
3.3.2 Delivery	<u>65</u>
3.3.3 Bars	<u>67</u>
3.3.4 Advertising	<u>68</u>
<b>References</b>	<b><u>69</u></b>

## CHAPTER 4

<b>Transportation</b>	<b><u>71</u></b>
<b>4.1 Auto Business</b>	<b><u>71</u></b>
4.1.1 Working for the Big Companies	<u>71</u>
4.1.2 Individual Ownership	<u>72</u>
4.1.3 Antique Human-Driven Vehicles	<u>73</u>
4.1.4 Dealerships	<u>73</u>
4.1.5 Auto Insurance	<u>74</u>
4.1.6 Motor Pools and Company Cars	<u>75</u>
4.1.7 Gas Stations	<u>75</u>

<b>4.2 Trucking</b>	<b><u>76</u></b>
<b>4.3 Roads</b>	<b><u>79</u></b>
4.3.1 No Need for More Lanes	<b><u>80</u></b>
4.3.2 Smooth Pavement and Bright Lines	<b><u>82</u></b>
4.3.3 Reducing Spending on Safety Countermeasures	<b><u>83</u></b>
4.3.4 Other Changes at the Highway Agency	<b><u>84</u></b>
4.3.5 Highway Agency Funding	<b><u>85</u></b>
4.3.6 New Funding Sources	<b><u>87</u></b>
4.3.7 Auto Companies Own the Roads	<b><u>88</u></b>
<b>4.4 Transit</b>	<b><u>89</u></b>
4.4.1 Driverless Transit Vehicles	<b><u>91</u></b>
4.4.2 Competition from Auto Service Companies	<b><u>91</u></b>
4.4.3 Lower-Income Travelers	<b><u>92</u></b>
4.4.4 Curtailing Transit Investment	<b><u>93</u></b>
<b>References</b>	<b><u>93</u></b>

## CHAPTER 5

<b>Institutions</b>	<b><u>95</u></b>
<b>5.1 Law Enforcement</b>	<b><u>95</u></b>
5.1.1 Security from Hackers	<b><u>95</u></b>
5.1.2 Big Brother	<b><u>96</u></b>
5.1.3 Low Crime Rates	<b><u>98</u></b>
5.1.4 Few Driving-Related Crimes or Violations	<b><u>99</u></b>
5.1.5 Reduced Police Presence	<b><u>100</u></b>
<b>5.2 Lawyers</b>	<b><u>100</u></b>
5.2.1 The Early Days	<b><u>101</u></b>
5.2.2 The Legal Crash	<b><u>102</u></b>
<b>5.3 Health Care</b>	<b><u>102</u></b>
5.3.1 Crash Costs	<b><u>102</u></b>
5.3.2 More Expensive Deaths	<b><u>103</u></b>
5.3.3 Fewer Deaths from Air Pollution	<b><u>104</u></b>
5.3.4 Emergency Services	<b><u>104</u></b>
<b>5.4 Education</b>	<b><u>105</u></b>
5.4.1 Preschool	<b><u>105</u></b>
5.4.2 Elementary Schools	<b><u>105</u></b>
5.4.3 Middle and High Schools	<b><u>107</u></b>

5.4.4 Before and After School Activities	<u>108</u>
5.4.5 Universities	<u>109</u>
<b>References</b>	<b><u>110</u></b>

## CHAPTER 6

<b>Environment</b>	<b><u>113</u></b>
<b>6.1 Noise, Water, and Air</b>	<b><u>113</u></b>
6.1.1 Noise	<u>113</u>
6.1.2 Water	<u>114</u>
6.1.3 Energy Production and Transmission	<u>115</u>
6.1.4 CO <sub>2</sub> Emission	<u>118</u>
<b>6.2 Wildlife</b>	<b><u>121</u></b>
6.2.1 Extent of Current Problem	<u>121</u>
6.2.2 Automated Vehicles Will Reduce the Toll	<u>122</u>
6.2.3 Habitat Loss	<u>123</u>
6.2.4 More Investment in Animal Protection	<u>123</u>
<b>6.3 Evacuations</b>	<b><u>124</u></b>
6.3.1 Future Planning	<u>125</u>
6.3.2 More Central Authority	<u>126</u>
<b>References</b>	<b><u>127</u></b>

## CHAPTER 7

<b>Wrap-Up</b>	<b><u>129</u></b>
<b>7.1 Around the World</b>	<b><u>129</u></b>
<b>7.2 Summary</b>	<b><u>131</u></b>
7.2.1 Cannot Stop Them	<u>131</u>
7.2.2 Big Changes Ahead	<u>132</u>
7.2.3 Can Try to Prepare	<u>136</u>
<b>Reference</b>	<b><u>137</u></b>
About the Author	<u>139</u>
Index	<u>141</u>